

Seven New Genera of the Subfamily Doryctinae (Hymenoptera: Braconidae) from the Old World

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Abstract.—Seven new genera of the subfamily Doryctinae from the tropical and subtropical regions of the Old World are described and illustrated: *Cryptodoryctes* gen. nov. (type species *Cr. turneri* sp. nov. from South Africa), *Chelonodoryctes* gen. nov. (type species *Ch. inopinatus* sp. nov. from Brunei), *Synspilus* gen. nov. (type species *S. nitidus* sp. nov. from Sarawak), *Bracodoryctes* gen. nov. (type species *B. tergalis* sp. nov. from New Guinea), *Afrospathius* gen. nov. (type species *Af. dispar* sp. nov. from Africa), *Hemispalthius* gen. nov. (type species *H. polystenoides* sp. nov. from Uganda), and *Antidoryctes* gen. nov. (type species *An. pronotalis* sp. nov. from Australia). Three further species of *Bracodoryctes* gen. nov. are also described: *B. longitarsus* sp. nov., *B. curvinervis* sp. nov., *B. nigriceps* sp. nov. The affinities of the new genera are discussed.

The Doryctinae are one of the most interesting and diversified subfamilies of Braconidae. More than one hundred and twenty valid genera have been described, which, for the most part, are restricted to tropical and subtropical regions (Shenefelt & Marsh 1976; Belokobylskij 1992; Marsh 1993). The generic richness of the Doryctinae is highest in the Neotropical region but this region has also been the most thoroughly investigated, especially by Paul Marsh, who has described many new genera from there (e.g. Marsh 1993), and has recently provided a key to the genera occurring in the New World (Marsh 1997). In comparison, the generic composition of the Old World fauna is really incomplete but, even so, it would appear that the Old World tropics are home to fewer genera than the New World. This pattern of generic level diversity is, interestingly, the opposite of that found in the closely-related and apparently biologically similar Braconinae which have far more genera in the Old World tropics (Quicke 1987, Quicke 1997).

Phylogenetic relationships between the genera of Doryctinae have until recently been based largely on the relatively impoverished Nearctic and Palaearctic faunas (Fischer 1981, Belokobylskij 1992). Further, the characters used have principally concerned external adult morphology such as the presence and absence of various carinae, sutures, and wing veins, and the shape of the metasoma. The discovery of many new internal characters involving male genitalia (Belokobylskij 1987), the venom apparatus (Quicke *et al.* 1992a) and most recently, the internal sculpture of the ovipositor egg canal (Rahman *et al.* 1998), has greatly increased the possibility of obtaining a meaningful phylogenetic tree. Seven new genera from the Old World tropics and subtropics are described here to make their names available for future publications on the phylogeny of the subfamily (Belokobylskij, Marsh & Quicke in preparation).

Of the new taxa described below, *Chelonodoryctes* gen. nov., whose affinities are

uncertain, is the first doryctine genus in which the 2nd and 3rd metasomal tergites are greatly enlarged, covering the following segments of the metasoma in the same way as is known for various genera of Rogadinae and Lysiterminae. Loss of both the occipital and prepectal carinae is one of the main characteristics of the subfamily Braconinae and is a character used in many older keys for separating the Braconinae from the Doryctinae. The new genus *Bracodoryctes* gen. nov., of which four new species are described below, is the second known doryctine genus without these carinae, the first being *Siragra* Cameron which was correspondingly separated from other doryctines in the tribe Siragrini (Belokobylskij 1994). Transformations of the scape are known in several doryctine genera (e.g. *Syngaster* Brullé, *Pseudodoryctes* Szépligeti, *Siragra* Cameron, *Binarea* Brullé, *Pseudorhoptrocentrus* Granger, *Jarra* Marsh & Austin) as they are among the Braconinae (Quicke 1987). However, the new genus *Synspilus* gen. nov. is the first doryctine in which the scape not only has an apical lobe demarcated by a preapical, transverse carina, but also has a strong basal constriction as in the *Atanycolus* Forster group of genera in the Braconinae (Quicke 1987) which are all parasitoids of bark-boring or subcortical beetles in dead standing or fallen wood. In addition, this genus is included in a group with an apically open 1st subdiscal cell and a strongly reduced vein 2RS (tribe Heterospilini: Belokobylskij 1992). *Cryptodoryctes* gen. nov. is an African genus that appears to be related to *Priosphys* Enderlein and *Odontodoryctes* Granger, with which it shares the following putative synapomorphies: absence of the basoventral tubercle of the hind coxa and the short subbasal cell of the hind wing. It lacks an occipital carina but has a distinct pronope on the anterodorsal part of the neck. Two new genera of the tribe Spathiini are described in this paper. *Afrospathius* gen. nov. is especially interesting because it is

the first genus of the subtribe Psenobolina to be found in the Old World. The male of the type species, *A. dispar* sp. nov., is characterised by the loss of vein r-m of the fore wing (present in the female) and by the presence of a large stigma-like enlargement in the hind wing. *Hemispathius* gen. nov. is related to *Spathiomorpha* Tobias from the Palaearctic and Oriental Regions, and also to the Neotropical genus *Notiospathius* Matthews & Marsh, making it particularly interesting biogeographically.

TERMINOLOGY AND COLLECTIONS

Terminology follows that of Wharton et al. (1997). Because this is inconsistent with the usage by the senior author in many papers on the Doryctinae, a table is provided giving the equivalent new terms as defined by Tobias (1976) (Table 1). The following abbreviations are used: POL—postocellar line, OOL—ocular-ocellar line, Od—maximum diameter of lateral ocellus. Specimens are held in The Natural History Museum, London, England (BMNH), the Bishop Museum, Honolulu (BPBM) and the Zoological Institute, Russian Academy of Sciences, St. Petersburg, Russia (ZIP).

DESCRIPTIONS OF NEW TAXA

Cryptodoryctes gen. nov.

Diagnosis.—This new genus is related to two other African genera, *Priosphys* Enderlein and to *Odontodoryctes* Granger. *Cryptodoryctes* differs from the other two by the hind coxa being without dorsal teeth, lack of an occipital carina, the 2nd tergite having lateral depressions, and the presence of a pronope. *Cryptodoryctes* gen. nov. differs from the Neotropical genus *Megaloproctus* Schulz in that the subbasal cell of the hind wing is very short, the occipital carina lost, a pronope is present, and the 2nd metasomal suture has strong lateral breaks.

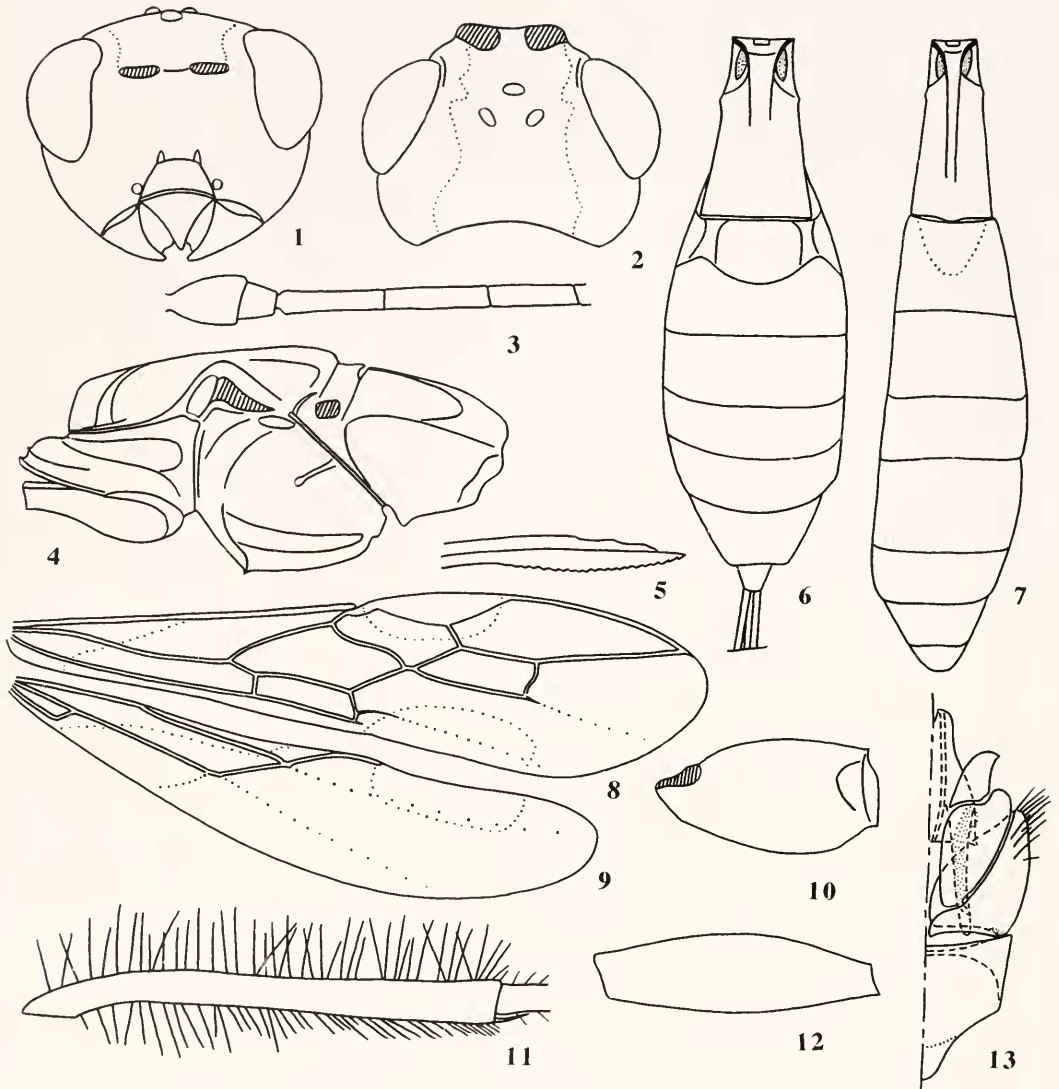
Description.—**Head:** subcubical (Fig. 2), 1.4–1.5 times wider than long medially.

Table 1. Correspondence between wing venation terms employed here (see also Wharton et al. 1997) and those used in many papers on Doryctinae by Belokobylskij following Tobias (1976).

Wharton et al. (1997) and present paper	Tobias (1976)
	Forewing cells
1st subdiscal	brachial
1st discal	discoidal
marginal	radial
2nd submarginal	2nd radiomedial
	Forewing veins
1-1A	anal
1M	basal (lateral)
1M, 2M and 3M	medial (1st-3rd abscissas)
R1a (or R1 if R1b not present)	metacarpus
1cu-a	nervulus
2CUb	parallel
r	1st radial abscissa
3RSa	2nd radial abscissa
3RSb	3rd radial abscissa
2RS	1st radiomedial abscissa
r-m	2nd radiomedial abscissa
1a and 2a	transverse anal veins
m-cu	recurrent
	Hind wing cells
basal	medial
marginal	radial
subbasal	submedial
	Hind wing veins
m-cu	recurrent
C+SC+R and SC+R	costal 1
R1	costal 2
RS	radial
2M (and 3M)	medial
cu-a	nervellus
M+CU	mediocubital 1
1M	mediocubital 2

First flagellar segment nearly as long as 2nd segment. Scapus (Fig. 3) rather short and wide, without apical lobe; almost 1.5 times longer than maximum width. Palpi long; maxillary palpi 6-segmented, labial palpi 4-segmented; 3rd segment of labial palp relatively long. Malar suture absent. Clypeal suture complete. Hypoclypeal depression medium-sized and round (Fig. 1). Face with 2 distinct submedial oval depressions above the clypeal suture. Eyes glabrous. Ocelli in triangle with base 1.2 times longer than sides. Occipital carina entirely absent. Postgenal bridge very nar-

row. Frons not concave and without median keel. **Mesosoma:** depressed. Neck rather long, with convex dorsal lobe; pronope present, but shallow; pronotal keel distinct, near anterior margin of pronotum. Propleural lobe distinct and narrow. Mesonotum not strongly and roundly raised above promesosoma (Fig. 4). Median lobe of mesoscutum without anterolateral angulations (corners). Notauli smooth, deep in anterior half, very shallow on posterior half. Prescutellar depression rather long and sparsely sculptured. Scuto-scutellar suture distinct. Scutellum



Figs. 1-13. *Cryptodoryctes turneri* gen. & sp. nov. 1—head, frontal view; 2—head, dorsal view; 3—basal segments of antenna; 4—mesosoma; 5—apical part of ovipositor; 6—metasoma of female; 7—metasoma of male; 8—fore wing; 9—hind wing; 10—hind coxa; 11—hind tibia; 12—hind femur; 13—male genitalia.

weakly convex, without lateral carinae, striate posteriorly, its length nearly equal to maximum width. Postscutellum without median tooth. Subalar depression shallow and wide. Mesopleural pit deep and round. Sternauli deep, narrow, long, straight and smooth. Prepectal carina distinct and complete. Metapleural flange rather short, wide and pointed apically. Propodeum without margined areas; lat-

eral tubercles and propodeal bridge absent. Propodeal spiracles small and round. *Fore wing*: Pterostigma (Fig. 8) wide; vein r arising from close to middle of pterostigma. Marginal cell slightly shortened. Forewing veins 2RS and r-m present. Vein m-cu antefurcal. Vein 1cu-a postfurcal. First discal cell petiolate. Vein 2CUb arising from posterior quarter of distal side of 1st subdiscal cell. First subdiscal cell closed.

Vein M + CU not curved towards vein 1A. Hind wing (Fig. 9) with 3 hamuli on vein R1. Vein cu-a present. Subbasal cell short. Vein M + CU 0.4 times length of 1M. Vein m-cu present, curved toward base of wing. Basal cell wide; nearly 0.5 times as long as hind wing. Vein RS arising from vein R1. Marginal cell weakly widened apically, without transverse vein. Vein C + SC + R 0.8 times length of SC + R. *Legs*: All tibiae slender. Fore tibia with sparse large spines more or less arranged in a single row. Hind tibia with 1–3 spines on outer side and with area of dense white setae on inner distal edge. Hind coxa rather large, without basoventral tooth (Fig. 10). Femora without anterodorsal protuberances. Hind femur 3.2–3.3 times as long as wide (Fig. 12). Hind tibial spurs rather short and slender, setose, inner spur 0.2–0.25 times as long as hind basitarsus. Hind basitarsus 0.9 times as long as 2nd–5th segments combined. **Metasoma**: First tergite not petiolate, rather wide (Figs. 6, 7). Acrosternite 0.2 times as long as 1st tergite, its apical margin located anterior to spiracles. Dorsople of 1st tergite large; basolateral lobes absent. Spiracular tubercles indistinct, spiracles in basal quarter of 1st tergite; dorsal carinae present on basal half. Second suture fine, with strong breaks laterally. Second tergite with parallel, lateral, wide furrows (Fig. 6). Second to 3rd tergites with separate laterotergites. Hypopygium small, without medioposterior process. Ovipositor longer than metasoma, down-curved apically; apex of dorsal valve with 3 small nodes and apex of ventral valves serrate.

Distribution.—South Africa.

Etymology.—From 'crypticus' (Greek for 'secret') and the generic name *Doryctes*, because this genus is at least superficially similar to the type genus of the subfamily. Gender: masculine.

Type species.—*Cryptodoryctes turneri* sp. nov.

Cryptodoryctes turneri sp. nov.

(Figs. 1–13)

Material examined.—Female HOLOTYPE with the following data: 'S. Africa, R. E. Turner, Brit. Mus. 1923–341', 'Port St. John, Pondoland, June 1–11.1923' (BMNH). Paratypes. 1 female, 'E. Cape Prov., Katberg. 4000 ft, 14–26.XI.1932', 'S. Africa, R. E. Turner, Brit. Mus. 1932–577' (BMNH); 1 female, 'S. Africa, R. E. Turner, Brit. Mus. 1923–547', 'Port St. John, Pondoland, Oct. 1923' (ZIP); 1 male, 'Natal: Kloof. 1500 ft, Sept. 1926', 'S. Africa, R. E. Turner, Brit. Mus. 1926–404' (BMNH).

Description.—Female. **Body length**: 6.8–8.3 mm; fore wing length 6.2–7.0 mm. **Head**: Antennae slender, filiform, 48-segmented. First flagellar segment almost 4.5 times as long as its apical width. Penultimate segment 3.3 times as long as wide, 0.3 times as long as 1st segment, 0.8 times as long as apical segment, which is with short apical spine. Clypeus with very short flange along lower margin. Width of hypoclypeal depression 0.8 times distance from depression to eye. Tentorial pits distinct. Cheek height 0.5 times height of eye, 0.9 times basal width of mandible. Face width 1.2 times eye height and 1.4–1.5 times height of face and clypeus combined. Eye 1.2 times as high as broad. Temple behind eyes roundly narrowed, transverse diameter of eye 1.5 times as long as temple (dorsal view). Frons with shallow longitudinal median furrow. POL 1.1–1.3 times Od, 0.5–0.6 times OOL; Od 0.5 times OOL. Head roundly narrowed below eyes. **Mesosoma**: Length 2.2 times its height. Subalar depression smooth, punctulate on anterior quarter. Propodeum weakly convex and roundly narrowed toward apex. *Wings*: Length of fore wing 3.8–4.0 times its maximum width. Pterostigma 4–5 times as long as wide, 0.9 times as long as vein R1. Vein 3RSa 3.5–3.7 times length of vein r, 0.5 times length of 3RSb, 1.3–1.5 times length of 2RS. Vein 3RSb straight. Second submarginal cell

rather long, not widened apically, its length 2.8 times its width, 1.1 times length of 1st subdiscal cell. First subdiscal cell wide. Distance from vein 1cu-a to vein 1M almost equal to length of 1cu-a. Hind wing 4.6 times as long as wide. *Legs*: Fore tibia with 4–6 spines at one row on inner side and with 5–7 spines on distal margin. Middle tibia without spines on outer side and with 5 spines on distal margin. Hind tarsus as long as hind tibia. Second tarsal segment 0.4–0.5 times as long as 1st segment, 1.4 times as long as 5th segment (excluding pretarsus). Hind basitarsus with narrow lower keel. **Metasoma**: Length of 1st tergite 1.4–1.5 times its apical width; apical width 1.8–2.0 times its basal width. Length of 2nd tergite 0.4–0.5 times its basal width, 1.2–1.3 times length of 3rd tergite. Ovipositor sheath almost 1.1 times as long as metasoma, 0.6 times as long as body, 0.6–0.7 times as long as fore wing. **Sculpture and setosity**: Head smooth; face densely reticulate, smooth medially. Mesoscutum smooth, strongly rugose on great medioposterior area. Scutellum and mesopleura smooth. Pronotum densely rugulose, almost smooth laterally. Metapleura strongly punctulate, with reticulation. Propodeum finely punctulate, with reticulation, partly smooth, with undulate median carina at least on basal third. Legs smooth. First metasomal tergite striate with rugulae, smooth medioposteriorly, remaining tergites smooth. Body with long outstanding pale and sparse setae. Legs with long, outstanding and rather sparse setae, length of setae on dorsal side of hind tibia 1.4–1.8 times as long as maximum width of hind tibia. **Colour**: Head yellowish brown, frons and median part of vertex dark brown. Mesosoma dark reddish brown, promesosoma (except dark dorsal part) and medioposterior spot of mesoscutum yellowish brown. Metasoma light brown, 1st and 7th or 4th–7th tergites dark reddish brown. Antennae almost black. Palpi and tegulae pale yellow. Legs yellow. Wings infusate, with more

or less distinct light spots near pterostigma and along vein 2CUb. Pterostigma pale yellow.

Male. **Body length**: 5.4 mm; fore wing length 5.0 mm. Transverse diameter of eye 1.2 times as long as temple. Antennae slender. First flagellar segment 6 times as long as apical width. Mesosoma narrow, its length 2.4 times its width. Metasoma narrow (Fig. 7). Length of 1st tergite 2.1 times its apical width, apically 1.5 times basal width. Lateral furrow of 2nd tergite shallow. Length of 2nd tergite nearly equal to its basal width. Second suture almost straight. First tergite almost entirely and median area in basal half of 2nd tergite striate. Basolateral areas of propodeum sparse punctulate. Otherwise similar to female.

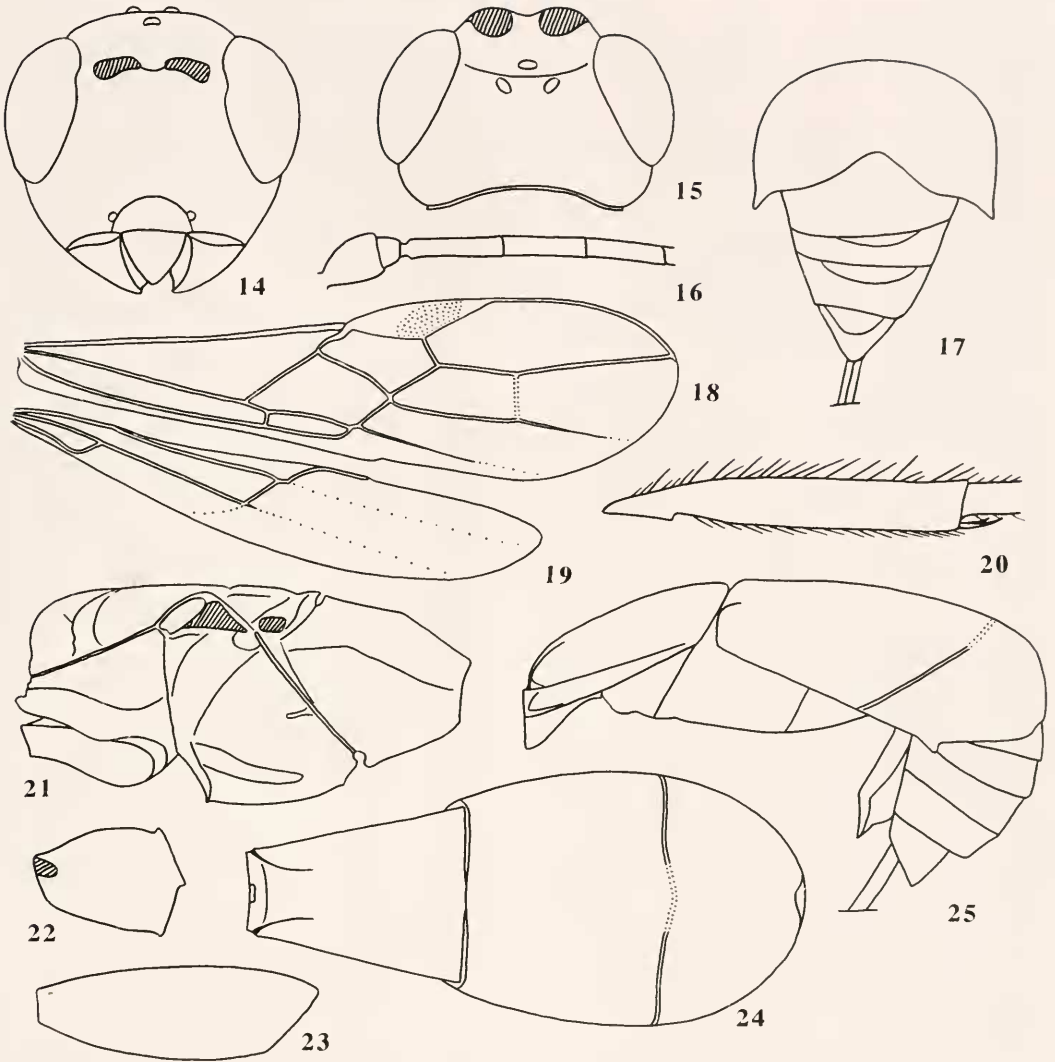
Remarks.—We have studied one female ('S. Africa. R. E. Turner. Brit. Mus. 1924–177', 'Port St. John, Pondoland. 1–17. Mar. 1924'), which is very close to *C. turneri* sp. nov., but differs by having a distinctly shorter 1st metasomal tergite (its length almost equal to apical width). We are not describing a new species for this specimen here because it is possibly only an atypical individual.

Etymology.—In memory of the collector of the type specimen.

Chelonodoryctes gen. nov.

Diagnosis.—This new genus differs from all other Doryctinae in having a carapace formed from the 2nd and 3rd metasomal tergites which conceals all the following segments. The genus is tentatively included in the Doryctini.

Description.—**Head**: weakly transverse (Fig. 15), 1.6 times wider than long medially. Scapus (Fig. 16) wide and short, without apical lobe; 1.3 times longer than maximum width. First flagellar segment simple, slightly longer than 2nd segment. Palpi rather long; maxillary palpi 6-segmented, labial palpi 4-segmented; 3rd segment of labial palp not shortened. Malar suture absent. Hypoclypeal depres-



Figs. 14–25. *Chelonodoryctes inopinatus* gen. & sp. nov. 14—head, frontal view; 15—head, dorsal view; 16—basal segments of antenna; 17—metasoma, posterior view; 18—fore wing; 19—hind wing; 20—hind tibia; 21—mesosoma; 22—hind coxa; 23—hind femur; 24—metasoma, dorsal view; 25—metasoma, lateral view.

sion small and round (Fig. 14). Clypeal suture fine and complete. Frons weakly concave and without median keel. Eyes glabrous. Ocelli in triangle with base 1.3 times side. Occipital carina present dorsally, absent ventrally and therefore not fused with hypostomal carina. Postgenal bridge wide. **Mesosoma:** Neck of promesosoma short, simple dorsally. Pronotal keel fine. Propleural lobe distinct and wide. Mesonotum strongly and roundly

raised above promesosoma (Fig. 21). Notauli deep on anterior half, shallow on posterior half, crenulate. Prescutellar depression long. Scuto-scutellar suture distinct. Scutellum flat, with fine lateral carinae, its length almost equal to maximum width. Postscutellum with short median tooth. Subalar depression shallow and rather wide. Mesopleural pit shallow. Sternauli deep, rather long, straight, widened posteriorly, crenulate. Prepectal ca-

rina distinct and complete. Metapleural flange short, narrow and round apically. Propodeum without marginate areas; lateral tubercles and propodeal bridge absent. Propodeal spiracles small and round. *Fore wing*: Pterostigma (Fig. 18) wide; vein r arising from middle of pterostigma. Marginal cell not shortened. Veins 2RS and r-m present. Vein m-cu slightly postfurcal. Vein cu-a postfurcal. Discoidal cell petiolate. Vein 2Cub interstitial, that is, arising from junction of vein m-cu and 1Cub. First subdiscal cell closed. Vein M + CU not curved to vein 1A. Hind wing (Fig. 19) with 3 hamuli on vein R1. Vein cu-a present. Subbasal cell short. Vein M + CU 0.6 times length of 1M. Vein m-cu present but unsclerotized and not tubular, curved toward base of wing. Basal cell wide, 0.5 times as long as hind wing. Vein RS arising from vein R1. Marginal cell weakly widened toward apex, without additional transverse vein. Vein C + SC + R 0.7 times length of SC + R. *Legs*: All tibiae distinctly thickened. Fore and middle tibiae with sparse large spines forming a single longitudinal row. Hind tibia with 6 spines on outer side of apex and with area of dense white setae on inner distal edge. Hind coxa medium sized, with basoventral tooth (Fig. 22). Femora without anterodorsal protuberances. Hind femur 3 times as long as wide (Fig. 23). Hind tibial spurs rather long and slender, almost glabrous, inner spur almost 0.3 times as long as hind basitarsus. Hind basitarsus thickened, 0.55 times as long as 2nd–5th segments combined. *Metasoma*: First tergite not petiolate, wide (Fig. 24). Acrosternite slightly elongate, 0.3 times as long as 1st tergite, its apical margin near level of spiracles (Fig. 25). Dorsople of 1st tergite small, basolateral lobes absent. Spiracular tubercles very small, spiracles placed on basal third of tergite, dorsal carinae present and complete. Second suture present, but shallow and fine. Second tergite without areas (Fig. 24). Second and 3rd tergites enlarged, covering following tergites, with

separate laterotergites. Posterior margin of 3rd tergite with 2 small ventrolateral teeth and distinct semicircular emargination medially (Figs. 17, 25). Hypopygium large, with short pointed process medio-posteriorly. Ovipositor longer than metasoma; apex of dorsal valve with single small nodus, apex of ventral valves serrate.

Distribution.—Island Borneo (Brunei).

Etymology.—From *Chelonus*, a generic name in the subfamily Cheloninae, and *Doryctes* a generic name in the Doryctinae, because of the similar structure of the metasoma to that of chelonines. Gender: masculine.

Type species.—*Chelonodoryctes inopinatus* sp. nov.

Chelonodoryctes inopinatus sp. nov.

(Figs. 14–25)

Material examined.—Female HOLOTYPE with the following data: 'Brunei: Bukit Sulang, nr Lamunin, N. E. Stork' (BMNH).

Description.—Female. **Body length**: 4.1 mm; fore wing length 3.1 mm. **Head**: Antennae with 39 segments. First flagellar segment 4.8 times as long as its apical width. Penultimate segment 4.5 times as long as wide, 0.5 times as long as 1st segment, 0.9 times as long as apical segment. Cheek height 0.5 times height of eye, approximately equal to basal width of mandible. Clypeus without flange along lower margin. Width of hypoclypeal depression 0.7 times distance from depression to eye. Tentorial pits small. Face width nearly equal to eye height and equal to height of face and clypeus combined. Eye 1.2 times as high as broad. Temple behind eyes strongly, roundly narrowed; transverse diameter of eye 2.7 times as long as temple (dorsal view). POL 1.2 times Od, 0.6 times OOL; Od 0.5 times OOL. Head strongly and almost linearly narrowed below eyes. **Mesosoma**: Length twice its height. Pronotum laterally with distinct longitudinal median carina. Subalar depression with coarse longitudinal striae. Propodeum

weakly convex and roundly narrowed toward apex. *Wings*: Length of fore wing 3.5 times its maximum width. Pterostigma 3.8 times as long as wide, 0.7 times as long as vein R1. Vein 3RSa 2.3 times vein r, 0.45 times vein 3RSb, 1.25 times vein 2RS. Second submarginal rather short and wide, its length 2.8 times its width, 1.5 times length of 1st subdiscal cell. First subdiscal cell narrow. Distance from vein cu-a to vein 1M 1.5 times length of cu-a. Hind wing 5.8 times as long as wide. *Legs*: Fore tibia with 5–6 spines at one row on inner side and with 7 spines on distal margin. Middle tibia with 5–6 median spines on outer side and approximately 6 spines on distal margin. Hind tarsus 0.9 times as long as hind tibia. Second tarsal segment 0.5 times as long as 1st segment, nearly as long as 5th segment (without pretarsus). Hind basitarsus with lower keel. **Metasoma**: Length of 1st tergite 1.3 times its apical width; apical width nearly twice its width. Second and 3rd tergites roundly curved at sides. Length of 2nd and 3rd tergites combined 1.6 times basal width of 2nd tergite, 1.3 times its maximum width. Ovipositor sheath 1.8 times as long as metasoma, 0.9 times as long as body, 1.1 times as long as fore wing. **Sculpture and setosity**: Vertex and frons striate, with granulation between striae; face and cheek rugulose-reticulate; temple coriaceous in upper two thirds and almost smooth in lower third. Mesoscutum granulose-reticulate, rugose in large medioposterior area. Scutellum densely granulate. Mesopleura coarsely rugose-reticulate. Propleura rugose. Metapleura and propodeum coarsely and densely reticulate. Hind coxa rugulose dorsally, granulate laterally; hind femur and tibia finely granulate. First and 2nd tergites entirely and basal two thirds of 3rd tergite striate with short transverse rugulae between striae; apical third of 3rd tergite reticulate. Mesosoma with short dense (especially on mesoscutum) white setae. Legs with short, semi-erect, pale, and rather dense setae, length of setae on

dorsal side of hind tibia 0.7–0.9 times as long as maximum width of hind tibia. **Colour**: Mesosoma and 1st–3rd metasomal tergites black with reddish tint. Head reddish brown. Sternites and apical segments of metasoma light brown. Palpi pale yellow. Antennae light reddish brown, darkened toward apex. Tegulae light brown. Legs yellow. Ovipositor sheath black. Wings faintly infusate. Pterostigma yellow, with large brown spot in apical half.

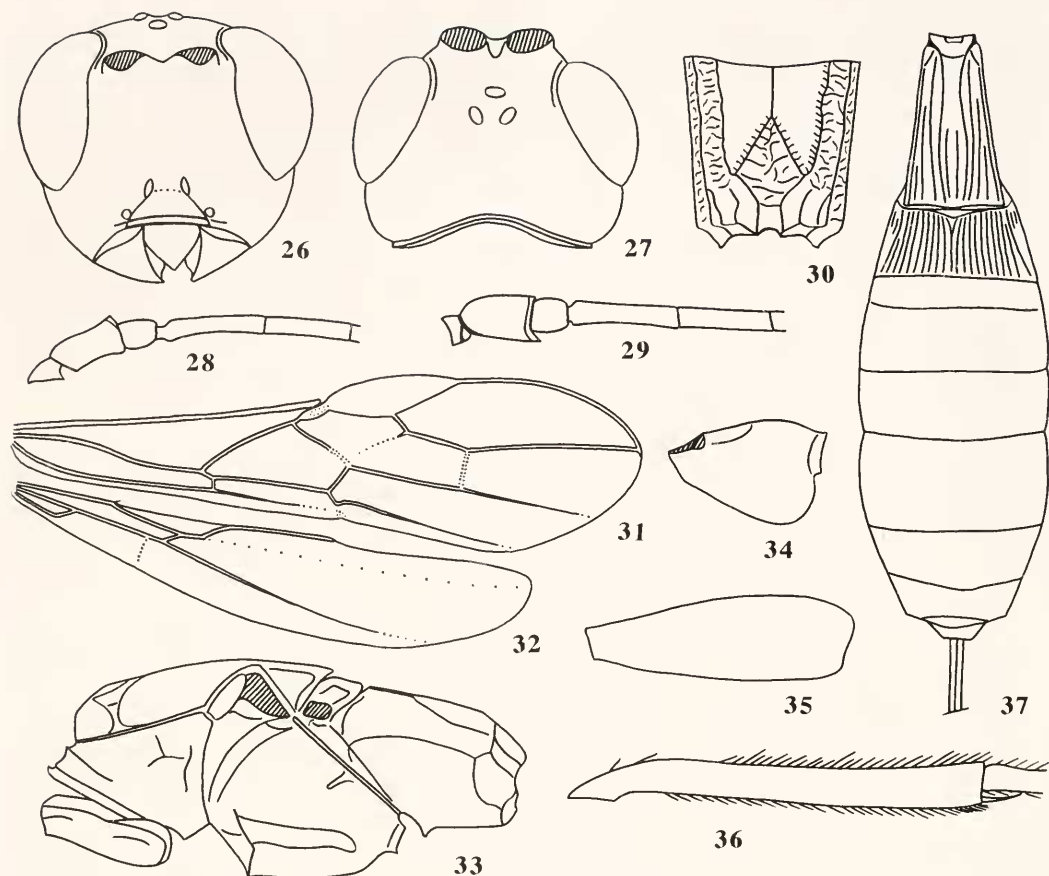
Male unknown.

Etymology.—From Latin '*inopinatus*' meaning 'unexpected' because the construction of the carapace is very unusual for members of the Doryctinae.

Synspilus gen. nov.

Diagnosis.—This new genus appears to be related to *Heterospilus* Haliday from which it differs by the presence of a narrow but distinct apical lobe on the scape and by a constriction at the base of the scape, the presence of distinct lateral carinae on the prepectus, hind coxa without a basoventral tooth, and the clypeus with double lower carinae. *Synspilus* and *Heterospilus* share the following synapomorphies: 1st subdiscal cell open apically, vein 2RS of forewing strongly reduced, basal cell of hind wing narrow, forewing vein m-cu almost perpendicular to vein 2M and propodeum with marginate basolateral areas.

Description.—**Head**: subcubical (Fig. 27), 1.5 times wider than long medially. Scape (Figs. 28, 29) rather short and wide, with strong basal constriction and with small semi-oval apical lobe and preapical keel along inner side; 1.7 times longer than maximum width. First flagellar segment simple, longer than 2nd segment. Palpi rather long; maxillary palpi 6-segmented, labial palpi 4-segmented; 3rd segment of labial palp not shortened. Malar suture very shallow. Hypoclypeal depression rather small and round (Fig. 26). Clypeus with double lower carinae. Clypeal suture



Figs. 26-37. *Synspilus nitidus* gen. & sp. nov. 26—head, frontal view; 27—head, dorsal view; 28—basal segments of antenna, dorsal view; 29—basal segments of antenna, lateral view; 30—areas of propodeum; 31—fore wing; 32—hind wing; 33—mesosoma; 34—hind coxa; 35—hind femur; 36—hind tibia; 37—metasoma.

distinct, shallow dorsally. Face with 2 distinct submedian oval depression above clypeal suture. Eyes glabrous. Frons weakly concave and without median keel, with lateral keels along border of eyes. Ocelli in equilateral triangle. Occipital carina present, complete, fused with hypostomal carina. Postgenal bridge distinct. **Mesosoma:** Neck of promesosoma short, simple dorsally. Pronotal keel distinct, near mesoscutum. Propleural lobe distinct and wide. Mesonotum highly and almost perpendicularly raised above promesosoma (Fig. 33). Median lobe of mesoscutum with short anterolateral angulations (corners). Notauli deep and smooth. Prescutellar depression rather long and smooth, with

sparse striae. Scuto-scutellar suture distinct. Scutellum weakly convex, without lateral carinae, its length 1.3 times maximum width. Postscutellum with short median keel. Subalar depression rather deep and narrow. Mesopleural pit very shallow and elongate. Sternauli deep, rather long, straight, and smooth. Prepectal carina distinct and complete. Prepectus with 2 lateral longitudinal parallel carinae. Meta-pleural flange rather short, narrow and pointed apically. Propodeum with marginate areas; lateral tubercles and propodeal bridge absent. Propodeal spiracles small and round. *Fore wing:* Pterostigma wide (Fig. 31); Vein r arising almost from middle of pterostigma. Marginal cell not

shortened. Vein 2RS largely unsclerotized, indistinct. postfurcal. Discoidal cell petiolate. Vein 2CUB distinctly curved basally. First subdiscal cell open apically. Vein M + CU not curved towards vein 1A. Hind wing (Fig. 32) with 3 hamuli on vein R1. Vein cu-a present. Subbasal cell short. Vein M + CU 0.7 times length of 1M. Vein m-cu present, antefurcal, almost perpendicular to medial vein, unsclerotized. Basal cell narrow, 0.33 times as long as hind wing. Hindwing vein RS arising from vein R1. Marginal cell weakly narrowed apically, without additional transverse vein. Vein C + SC + R 1.4 times length of SC + R. *Legs*: All tibiae slender. Fore tibia with numerous small and dispersed spines. Hind tibia with 4 spines on outer side and with row of dense white setae on inner distal edge. Hind coxa without basoventral tooth (Fig. 34). Femora without anterodorsal protuberances. Hind femur 3 times as long as wide (Fig. 35). Hind tibial spurs rather short and slender, sparsely setose, inner spur almost 0.25 times as long as hind basitarsus. Hind basitarsus 0.4 times as long as 2nd–5th segments combined. **Metasoma**: First tergite not petiolate, narrow (Fig. 37). Acrosternite 0.25 times as long as 1st tergite, its apical margin distinctly anterior to spiracles. Dorsople of 1st tergite distinct; basolateral lobes absent; spiracular tubercles indistinct, spiracles on basal third of tergite; dorsal carinae present and complete. Second suture distinct, very weakly curved laterally. Second tergite with very small semi-oval mediobasal area. 3rd tergite with transverse fine furrow in basal third. Second to 5th tergites with separate laterotergites. Hypopygium small, with very short and pointed process medioposteriorly. Ovipositor shorter than metasoma.

Distribution.—Sarawak.

Etymology.—From the parts of names of 'Syngaster' and 'Heterospilus' (genera of Doryctinae), because the new genus includes the characters of both these gen-

era, though it is not related to the former. Gender masculine.

Type species.—*Synspilus nitidus* sp. nov.

***Synspilus nitidus* sp. nov.**

(Figs. 26–37)

Material examined.—Female HOLOTYPE with the following data: 'Sarawak: 4th div. Gn. Mulu, RGS Exp., II-III 1978, N.M. Collins' (BMNH).

Description.—Female. **Body length**: 4.6 mm; fore wing length 3.2 mm. **Head**: Antennae slender, remaining 14 segments. First flagellar segment 5.3 times as long as its apical width, 1.1 times as long as 2nd segment. Width of hypoclypeal depression 0.6 times distance from depression to eye. Cheek height 0.3 times height of eye, 0.7 times basal width of mandible. Tentorial pits small. Face width 0.9 times eye height and 0.85 times height of face and clypeus combined. Eye 1.1 times as high as broad. Temple behind eyes strongly roundly narrowed, transverse diameter of eye twice as long as temple (dorsal view). POL 0.6 times Od, 0.3 times OOL; Od 0.4 times OOL. Head strongly and roundly narrowed below eyes. **Mesosoma**: Length 2.3 times its height. Subalar depression smooth, with 4 striae in upper half. Propodeum roundly narrowed toward apex. *Wings*: Pterostigma 3.2 times as long as wide, 0.7 times as long as vein R1. Vein 3RSa 3.3 times vein r, 0.4 times vein 3RSb, nearly equal to vein 2RS. Second submarginal long, its length 3 times maximum width, equal to length of 1st subdiscal cell. First subdiscal cell narrow. Distance from vein cu-a to vein 1M 0.5 times length of cu-a. Hind wing 5.3 times as long as wide. *Legs*: Fore tibia with numerous spines dispersed along inner side and with 5 spines on distal margin. Middle tibia with numerous spines on outer side and 5 spines on distal margin. Hind tarsus 1.1 times as long as hind tibia. Second tarsal segment 0.8 times as long as 1st segment, 1.4 times as long as 5th segment (without pretarsus). Hind basitarsus without lower keel.

Metasoma: Length of 1st tergite 1.8 times its apical width; apical width 1.6 times its basal width. Length of 2nd tergite 0.65 times its basal width, 0.85 times length of 3rd tergite. Ovipositor sheath 0.55 times as long as metasoma, 0.25 times as long as body, 0.4 times as long as fore wing. **Sculpture and setosity:** Vertex and frons smoothly striate, frons smooth medially; face coarsely reticulate; temple smooth. Mesosoma smooth. Propleura smooth, striate on lateral area. Metapleura smooth on anterior half, reticulate on posterior half. Propodeum with large and pentagonal areola, median carina slightly shorter than anterior sides of areola; basolateral areas smooth, rest part of propodeum (including near carinae) rugose. Legs smooth. First and 2nd metasomal tergites striate, rest part of metasoma smooth. Mesonotum glabrous almost entirely. Legs with short, semi-erect, pale, and dense setae, length of setae on dorsal side of hind tibia 0.4–0.8 times as long as maximum width of hind tibia. **Colour:** Body reddish brown, partly lighter. Antennae light brown, slightly darkened toward apex. Palpi pale yellow. Tegulae light brown. Legs light reddish or yellowish brown. Wings faintly infuscate. Pterostigma dark brown.

Male unknown.

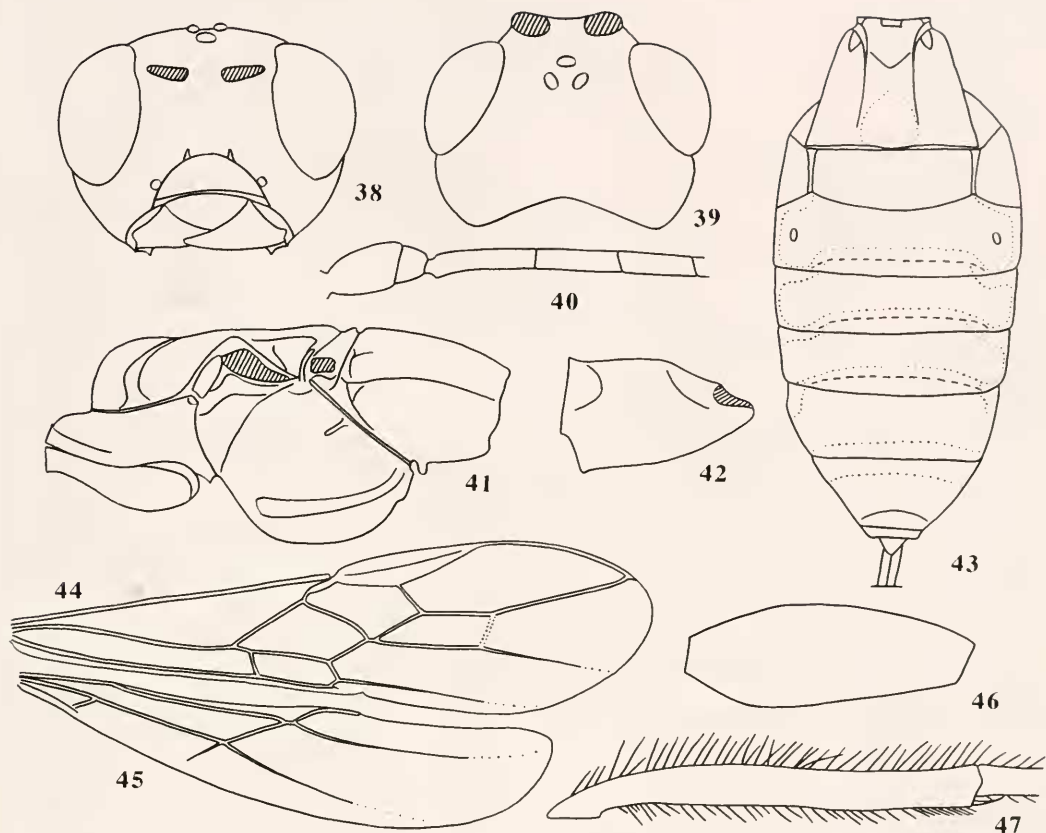
Etymology.—From Latin '*nitidus*' meaning 'shining' because most of the body of this species is without sculpture and is shiny.

Bracodoryctes gen. nov.

Diagnosis.—This new genus differs from all other genera of the tribe Doryctini (to which it might belong) by the absence of both the occipital and prepectal carinae. Both of these carinae are also absent in *Siragra* Cameron of the Siragrini, from which the new genus differs in having a simple scape, i.e. without an apical lobe and additional carina, by having the propodeal bridge indistinct, the hind coxa with a ba-

soventral tooth, and the basal ring of the male genitalia with a dorsal bridge.

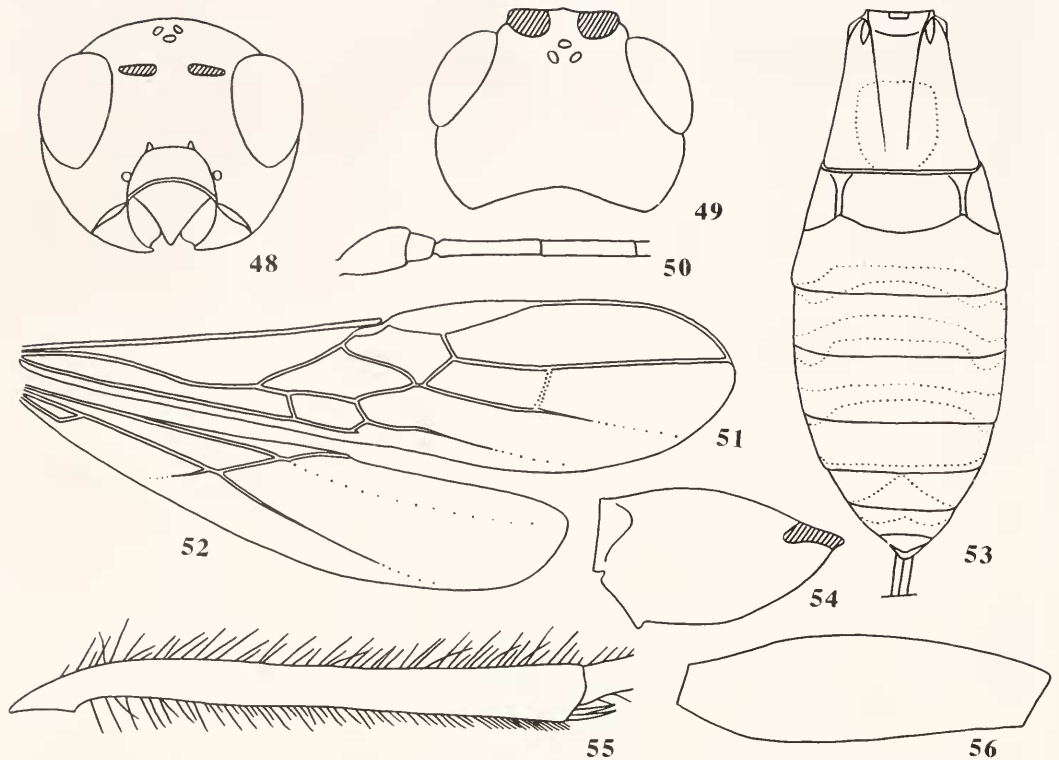
Description.—**Head:** subcubical (Figs. 39, 49, 58, 69), 1.4–1.5 times wider than long medially. Scapus (Figs. 40, 50, 59, 70) rather wide and short, without any lobes; 1.7–2.0 times longer than maximum width. First flagellar segment longer than 2nd segment. Palpi rather long; maxillary palpi 6-segmented, labial palpi 4-segmented; 3rd segment of labial palp long. Malar suture absent. Hypoclypeal depression rather great and round (Figs. 38, 48, 57, 68). Clypeal suture narrow and complete. Face with 2 small, but usually distinct submedian oval depression above clypeal suture. Eyes shortly setose. Frons not concave and without median keel. Ocelli almost in equilateral triangle. Occipital carina absent. Postgenal bridge very narrow. **Mesosoma:** Neck of promesosoma rather long or short, with more or less distinct dorsal lobe. Pronotal keel present. Propleural lobe distinct and wide. Mesonotum rather strongly and roundly raised above promesosoma (Figs. 41, 60, 71). Median lobe of mesoscutum without anterolateral angulations (corners). Notauli usually smooth, deep in anterior half, absent in posterior half, sometimes entirely absent. Prescutellar depression rather long or short, smooth. Scuto-scutellar suture distinct. Scutellum weakly convex, without lateral carinae, its length nearly equal to its maximum width. Postscutellum without median tooth. Subalar depression deep, rather narrow and smooth. Mesopleural pit very shallow and long. Sternauli shallow, long, straight and smooth. Prepectal carina absent. Prepectus simple. Metapleural flange rather long, narrow and pointed apically. Propodeum without marginate areas; lateral tubercles absent; propodeal bridge absent, rarely present, but very narrow. Propodeal spiracles rather small and round or oval. **Fore wing:** Pterostigma (Figs. 44, 51, 63, 74) rather narrow; Vein r arising before middle of pterostigma. Marginal cell not shortened



Figs. 38–47. *Bracodoryctes tergalis* gen. & sp. nov. 38—head, frontal view; 39—head, dorsal view; 40—basal segments of antenna; 41—mesosoma; 42—hind coxa; 43—metasoma; 44—fore wing; 45—hind wing; 46—hind femur; 47—hind tibia.

or only slightly shortened. Veins 2RS and r-m present. Vein m-cu usually antefurcal, rarely postfurcal (Fig. 74). Vein m-cu postfurcal. Discoidal cell petiolate. Vein 2CUB arising from middle or posterior third of apical side of 1st subdiscal cell. First subdiscal cell closed. Vein M + CU not curved to vein 1A. Hind wing (Figs. 45, 52, 64, 75) with 4–5 hamuli on vein R1. Vein cu-a present. Subbasal cell short. Vein M + CU 0.3–0.5 times length of 1M. Vein m-cu present, slightly curved toward base of wing. Basal cell narrow, nearly 0.5 times as long as hind wing. Vein RS arising from vein R1. Marginal cell almost parallel-sided, weakly narrowed near apex, without additional transverse vein. Vein C + SC + R 0.4–0.6 times length of

SC + R. *Legs*: All tibiae slender. Fore and middle tibiae with sparse large spines arranged in single longitudinal row. Hind tibia with 3 spines on outer side and with area of dense white setae on inner distal edge. Hind coxa with distinct basoventral tooth in females (Figs. 42, 54, 61, 76), but not in males (Fig. 77). Femora without anterodorsal protuberances. Hind femur 3.0–3.5 times as long as wide (Figs. 46, 56, 66, 78). Hind tibial spurs entirely or partly setose, rather short and slender, inner spur 0.2–0.3 times as long as hind basitarsus. Hind basitarsus 0.7–0.9 times as long as 2nd–5th segments combined, rarely equal to its. *Metasoma*: First tergite not petiolate, wide (Figs. 43, 53, 62, 72). Acrosternite nearly 0.2 times as long as 1st tergite,



Figs. 48–56. *Bracodoryctes longitarsus* gen. & sp. nov. 48—head, frontal view; 49—head, dorsal view; 50—basal segments of antenna; 51—fore wing; 52—hind wing; 53—metasoma; 54—hind coxa; 55—hind tibia; 56—hind femur.

its apical margin located anterior to spiracles. Dorsope of 1st tergite very large; basolateral lobes absent. Spiracular tubercles indistinct, spiracles placed in basal third of 1st tergite; dorsal carinae present. Second suture present, distinctly curved laterally; sometimes very fine. Second tergite with lateral, shallow, parallel or oblique furrows. Second to 4th tergites with separate laterotergites. Hypopygium

medium-sized, with short or long obtuse process medioposteriorly. Ovipositor longer or shorter than metasoma.

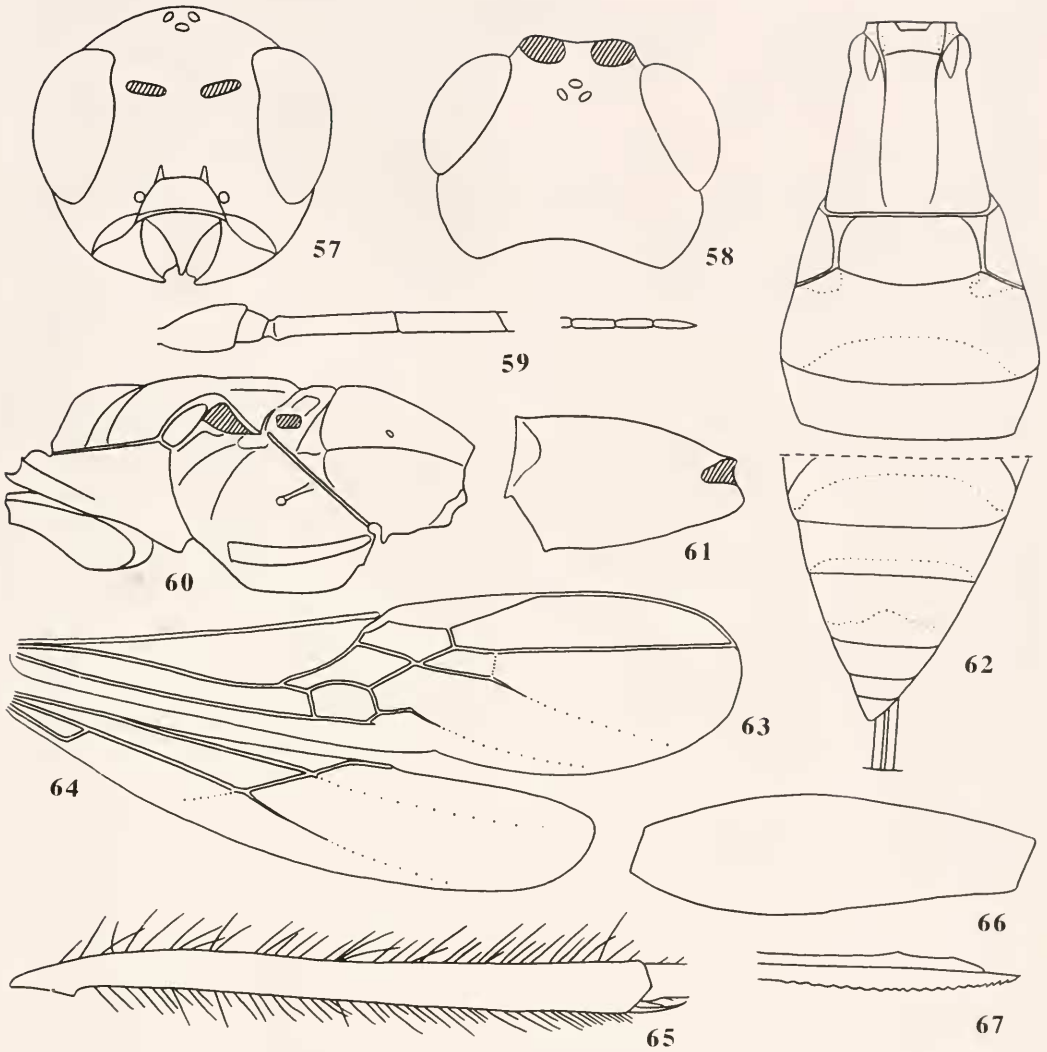
Distribution.—New Guinea.

Etymology.—From 'Bracon' and 'Doryctes' (generic names from the subfamilies Braconinae and Doryctinae), because the new genus displays characters of both these genera. Gender masculine.

Type species.—*Bracodoryctes tergalis* sp. nov.

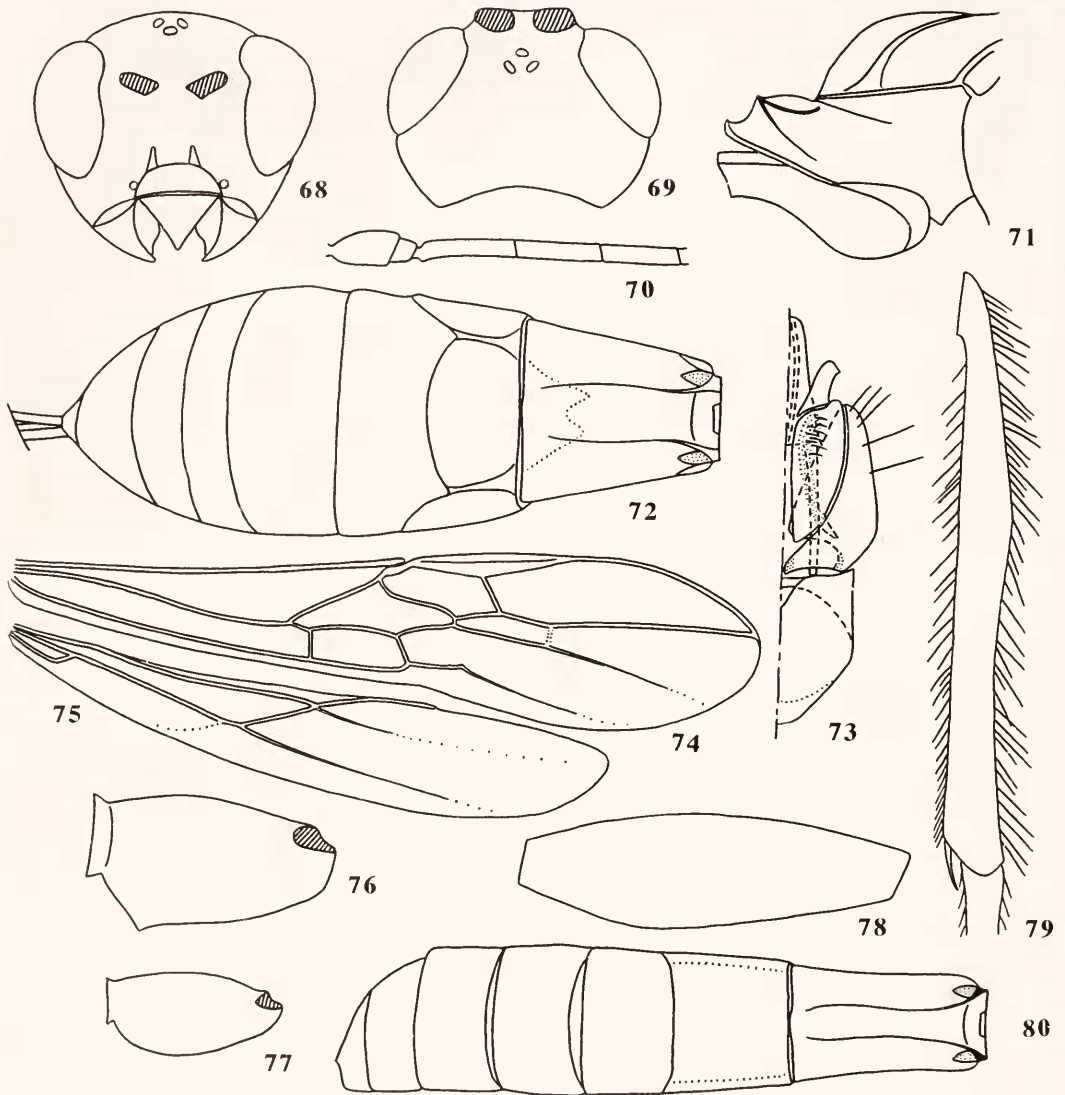
KEY TO SPECIES OF *BRACODORYCTES* gen. nov.

- 1 Face width 0.85 times height of face and clypeus combined. First metasomal tergite short, its length 0.75 times apical width. Ovipositor sheath short, 0.6 times as long as metasoma, 0.4 times as long as fore wing. Legs black. Metapleura entirely sculptured. *B. tergalis* sp. nov.
- 2 Face width 1.1–1.3 times height of face and clypeus combined. First metasomal tergite long, its length nearly equal to apical width. Ovipositor sheath long, 1.1–1.45 times as long as



Figs. 57–67. *Bracodoryctes curvinervis* gen. & sp. nov. 57—head, frontal view; 58—head, dorsal view; 59—basal and apical segments of antenna; 60—mesosoma; 61—hind coxa; 62—metasoma; 63—fore wing; 64—hind wing; 65—hind tibia; 66—hind femur; 67—apical part of ovipositor.

- metasoma, 0.7–0.85 times as long as fore wing. Legs light or yellowish brown. Metapleura in greater part smooth 2
- 2 Vein m-cu postfurcal. Second metasomal tergite of female only striate on basomedial half. Second metasomal suture very fine. Head black. Body length 8.7–10.5 mm *B. nigriceps* sp. nov.
- Vein m-cu antefurcal. Second metasomal tergite of female striate on all the median part. Second suture distinct. Head light or yellowish brown 3
- 3 Notauli entirely absent. Second submarginal cell long and widened toward apex. Vein 2Cub arising from middle of distal margin of 1st subdiscal cell. First subdiscal cell not wider than 2nd submarginal cell. Dorsal part of neck smooth. Body length 8.5 mm *B. longitarsus* sp. nov.
- Notauli distinct in basal half of mesoscutum. Second submarginal short and not widened



Figs. 68–80. *Bracodoryctes nigriceps* gen. & sp. nov. 68—head, frontal view; 69—head, dorsal view; 70—basal segments of antenna; 71—anterior part of mesosoma; 72—metasoma of female; 73—male genitalia; 74—fore wing; 75—hind wing; 76—hind coxa of female; 77—hind coxa of male; 78—hind femur; 79—hind tibia; 80—metasoma of male.

toward apex. Vein 2Cub arising from posterior third of distal margin of 1st subdiscal cell. First subdiscal cell wider than 2nd submarginal cell. Dorsal part of neck sculptured. Body length 10.0 mm *B. curviteris* sp. nov.

Bracodoryctes tergalis sp. nov.
(Figs. 38–47)

Material examined.—Female HOLOTYPE

with the following data: 'Papua N.G., Bulolo, 2.IX.1981', 'Castanopsis' sp. billet, H.U.Roberts coll., C.I.E.A. 13485' (BMNH).

Description.—Female. **Body length:** 7.5 mm; fore wing length 6.6 mm. **Head:** Antennae rather slender, remaining 30 segments. First flagellar segment 4.5 times as long as its apical width, 1.2 times as long as 2nd segment. Width of hypoclypeal depression 1.2 times distance from depression to eye. Clypeus with very short flange along lower margin. Tentorial pits distinct. Cheek height 0.3 times height of eye, 0.7 times basal width of mandible. Face width 0.8 times eye height and 0.85 times height of face and clypeus combined. Eye 1.1 times as high as broad. Temple behind eyes roundly narrowed, transverse diameter of eye 1.7 times as long as temple (dorsal view). POL 0.5 times Od, 0.3 times OOL; Od 0.5 times OOL. Head roundly narrowed below eyes. **Mesosoma:** Length nearly twice its height. Neck of promesosoma rather long. Pronotal keel distinct, but not high. Notauli distinct in anterior half only. Pre-scutellar depression rather long. Subalar depression entirely smooth. Propodeum regularly roundly narrowed toward apex. **Wings:** Length of fore wing 3.6 times its maximum width. Pterostigma 4.8 times as long as wide, as long as vein R1. Marginal cell slightly shortened. Vein 3RSa twice vein r, 0.5 times the straight vein 3RSb, 1.5 times vein 2RS. Vein m-cu antefurcal. Second submarginal rather long and narrow, not widened apically, its length 3.3 times its width, 1.3 times length of 1st subdiscal cell. First subdiscal cell wide. Distance from vein cu-a to vein 1M 0.7 times length of cu-a. Hind wing 4.6 times as long as wide. **Legs:** Fore tibia with 7 spines at one row on inner side and with 8 spines on distal margin. Middle tibia with 3 spines on outer side and 5–6 spines on distal margin. Hind tarsus 0.9 times as long as hind tibia. Second tarsal segment 0.4 times as long as 1st segment, 1.2 times as long as 5th segment (without pretarsus). Hind basitarsus with lower keel. **Metasoma:** Length of 1st tergite 0.75 times its apical width; apical width 2.2 times its basal

width. Length of 2nd tergite 0.33 times its basal width, 0.9 times length of 3rd tergite. Ovipositor sheath 0.6 times as long as metasoma, 0.3 times as long as body, 0.4 times as long as fore wing. **Sculpture and setosity:** Head and mesosoma smooth. Mesoscutum striate at small medioposterior area. Neck of promesosoma reticulaterugulose dorsally. Metapleura punctulaterugulose. Propodeum smooth at large basolateral areas, remaining part densely and strongly punctulate. Legs smooth. First metasomal tergite (except anterior quarter) densely and strongly punctulate; 2nd tergite rugulose-striate, smooth laterally. Remainder of metasoma smooth. Legs with long, erect and rather dense setae, length of setae on dorsal side of hind tibia 0.7–1.0 times as long as maximum width of hind tibia. **Colour:** Head and legs black with reddish tint. Mesosoma red, pronotum anteriorly and propleura darkened. Metasoma black; greater part of 1st tergite (except medioposterior triangle spot), lateral parts of 2nd and anterolateral parts of 3rd–6th tergites yellow; narrow medioposterior bands of 3rd–6th tergites transparent. Antennae black. Palpi dark reddish brown, almost black. Wings faintly infusate. Pterostigma dark brown.

Male unknown.

Etymology.—From Latin “tergum” because the 1st metasomal tergite is very short.

Bracodoryctes longitarsus sp. nov.

(Figs. 48–56)

Material examined.—Female HOLOTYPE with the following data: ‘New Guinea: Neth., Kutsime, West of Swart Val., 1500 m, Nov. 14, 1958’, ‘J.L. Gressitt Collector’ (BMNH).

Description.—Female. **Body length:** 8.5 mm; fore wing length 8.6 mm. **Head:** Antennae weakly setiform, remaining 47 segments. First flagellar segment 5.5 times as long as its apical width, 1.2 times as long as 2nd segment. Cheek height 0.3 times height of eye, 0.6 times basal width of

mandible. Width of hypoclypeal depression 1.25 times distance from depression to eye. Clypeus with flange along lower margin. Tentorial pits distinct. Face width 0.9 times eye height and 1.1 times height of face and clypeus combined. Eye 1.1 times as high as broad. Temple behind eyes roundly narrowed, transverse diameter of eye 1.2 times as long as temple (dorsal view). POL equal to Od, 0.2 times OOL; Od 0.2 times OOL. Head rather strongly and roundly narrowed below eyes. **Mesosoma:** Length nearly twice times its height. Neck of promesosoma long. Pronotal keel distinct and high. Notauli entirely absent. Prescutellar depression short. Subalar depression entirely smooth. Propodeum weakly regularly roundly narrowed toward apex. *Wings:* Length of fore wing 4 times its maximum width. Pterostigma 4.8 times as long as wide, 0.8 times as long as vein R1. Marginal cell not shortened. Vein 3RSa 4 times vein r, 0.6 times the straight vein 3RSb, 2.4 times vein 2RS. Vein m-cu antefurcal. Second submarginal long and wide, distinctly widened toward apex, its length 2.7 times its maximum width, 1.7 times length of 1st subdiscal cell. First subdiscal cell wide. Distance from vein cu-a to vein 1M 1.3 times length of cu-a. Hind wing 4.8 times as long as wide. *Legs:* Fore tibia with 9 spines at almost one row on inner side and with 6 spines on distal margin. Middle tibia with 1–2 spines on outer side and 6 spines on distal margin. Hind tarsus 1.2 times as long as hind tibia. Second tarsal segment 0.4 times as long as 1st segment, twice as long as 5th segment (without pretarsus). Hind basitarsus with lower keel. **Metasoma:** Length of 1st tergite equal to its apical width; apical width almost twice its basal width. Length of 2nd tergite 0.4 times its basal width, 0.9 times length of 3rd tergite. Ovipositor sheath 1.4 times as long as metasoma, 0.7 times as long as body, 0.7 times as long as fore wing. **Sculpture and setosity:** Head and mesosoma smooth. Promesosoma smooth. Me-

tableura smooth, rugose in posterior margin. Propodeum smooth at large basolateral areas, remaining part densely punctulate. Legs smooth. First and 2nd (except its smooth lateral parts) metasomal tergites striate; remaining part of metasoma smooth. Legs with long, almost erect and rather dense setosity; setae on dorsal side of hind tibia almost as long as maximum width of hind tibia. **Colour:** Head, mesosoma and legs light or yellowish brown, with reddish tint partly. Whitish yellow: greater part of 1st tergite (except large round black spot in distal half), lateral parts of 2nd, basal thirds of 3rd–7th tergites. Apical third of 3rd–7th tergites transparent; remaining parts of tergites black or dark reddish brown. Antennae dark reddish brown, lighter basally. Palpi yellow. Tegulae light brown. Wings faintly infuscate. Pterostigma brown.

Male unknown.

Etymology.—From Latin 'longus' for 'long' and 'tarsus' because all legs are rather long.

Bracodoryctes curvinervis sp. nov.

(Figs. 57–67)

Material examined.—Female HOLOTYPE with the following data: 'New Guinea: Neth., Waris, S. of Hollandia, 450–500 m, VII. 24–31–1959', 'T.C.Maa Collector. Bishop' (BPBM).

Description.—Female. **Body length:** 10.0 mm; fore wing length 8.7 mm. **Head:** Antennae setiform, 62-segmented. Apical segment with slender apical spine. Penultimate segment 4 times as long as wide, 0.3 times as long as 1st segment, 0.9 times as long as apical segment. First flagellar segment 6 times as long as its apical width, 1.2 times as long as 2nd segment. Width of hypoclypeal depression 1.2 times distance from depression to eye. Clypeus with flange along lower margin. Tentorial pits distinct. Cheek height 0.25 times height of eye, 0.5 times basal width of mandible. Face width 0.8 times eye height and 1.1 times height of face and clypeus

combined. Eye 1.3 times as high as broad. Temple behind eyes roundly narrowed, transverse diameter of eye 1.6 times as long as temple (dorsal view). POL 0.7 times Od, 0.2 times OOL; Od 0.3 times OOL. Head strongly and roundly narrowed below eyes. **Mesosoma:** Length 2.2 times its height. Neck of promesosoma long. Pronotal keel distinct, but not high. Notauli rather deep, shallow posteriorly, finely crenulate in anterior half. Prescutellar depression rather long. Subalar depression entirely smooth. Propodeum weakly and regularly roundly narrowed toward apex. **Wings:** Length of fore wing 3.6 times its maximum width. Pterostigma 5 times as long as wide, 0.75 times as long as vein R1. Marginal cell not shortened. Vein 3RSa almost twice vein r, 0.2 times the straight vein 3RSb, 1.5 times vein 2RS. Vein m-cu antefurcal. Second submarginal short and narrow, weakly widened toward apex, its length 2.7 times its maximum width, 1.3 times length of 1st subdiscal cell. First subdiscal cell wide. Distance from vein cu-a to vein 1M 0.75 times length of cu-a. Vein 1M and anterior part of 1st subdiscal cell curved. Hind wing 5 times as long as wide. **Legs:** Fore tibia with 7 thick spines at almost one row on inner side and with 8 spines on lower margin. Middle tibia with 3 spines on outer side and 5 spines on lower margin. Hind tarsus 1.1 times as long as hind tibia. Second tarsal segment 0.4 times as long as 1st segment, 1.6 times as long as 5th segment (without pretarsus). Hind basitarsus with lower keel. **Metasoma:** Length of 1st tergite nearly equal to its apical width; apical width almost twice its basal width. Length of 2nd tergite 0.4 times its basal width, 0.7 times length of 3rd tergite. Ovipositor sheath 1.1 times as long as metasoma, 0.6 times as long as body, 0.7 times as long as fore wing. **Sculpture and setosity:** Head and mesosoma smooth. Mesoscutum with 2 striae in medioposterior third. Promesosoma crenulate in narrow elongate area laterally. Metapleura smooth, punctulate-

rugulose in posterior margin. Propodeum smooth at large basolateral areas, remaining part densely punctulate-rugose; with distinct median and furcal carinae. Legs smooth. First and 2nd (except its smooth lateral parts) metasomal tergites striate; remaining part of metasoma smooth. Legs with long, semi-erect and dense setae, length of setae on dorsal side of hind tibia 0.8–0.9 times as long as maximum width of hind tibia. **Colour:** Head, mesosoma and legs light brown, with reddish tint partly. Yellow: greater part of 1st tergite (except round dark spot in distal half), lateral parts of 2nd, base of 3rd–5th tergites, great part of 6th and entirely 7th tergites. Apical thirds of 3rd–7th tergites transparent; remaining parts of tergites dark reddish brown. Antennae dark reddish brown, 2 basal segments lighter. Palpi yellow. Tegulae light brown. Wings faintly infusate. Pterostigma brown.

Male unknown.

Etymology.—From Latin '*curvus*' for 'curved' and '*nervus*' for 'vein' because of the distinctly curved vein 1M and veins of the 1st subdiscal cell.

Bracodoryctes nigriceps sp. nov.

(Figs. 68–80)

Material examined.—Female HOLOTYPE with the following data: 'Songara Pl., Pongdetta, N.G. Papua, *Theobromococoa* Blute. 20.II – 68, E. Hasson' (BMNH). Paratype. 1 male, 'Dutch New Guinea: Japen Is., Mt. Baduri, 1,000 ft, VIII.1938, L.E. Cheesman, B.M. 1938–593' (BMNH).

Description.—Female. **Body length:** 10.5 mm; fore wing length 9.3 mm. **Head:** Antennae setiform, remaining 58 segments. First flagellar segment 5 times as long as apically wide, 1.2 times as long as 2nd segment. Width of hypoclypeal depression 1.4 times distance from depression to eye. Clypeus with flange along lower margin. Tentorial pits distinct. Cheek height 0.25 times height of eye, 0.55 times basal width of mandible. Face width 0.8 times eye height and 1.2 times height of face and

clypeus combined. Eye 1.2 times as high as broad. Temple behind eyes roundly narrowed, transverse diameter of eye 1.6 times as long as temple (dorsal view). POL 0.6 times Od, 0.3 times OOL; Od 0.45 times OOL. Head rather strongly and almost linearly narrowed below eyes. **Mesosoma:** Length twice its height. Neck of promesosoma rather long. Pronotal keel distinct and high. Notauli deep and smooth in anterior half only, absent in posterior half. Prescutellar depression rather long. Subalar depression entirely smooth. Propodeum weakly regularly roundly narrowed toward apex. **Wings:** Length of fore wing 3.8 times its maximum width. Pterostigma 0.8 times as long as vein R1. Marginal cell not shortened. Vein 3RSa 1.6 times vein r, 0.2 times the straight vein 3RSb, 1.5 times vein 2RS. Vein m-cu postfurcal. Second submarginal rather short and narrow, not widened toward apex, its length 5 times its maximum width, 1.1 times length of 1st subdiscal cell. First subdiscal cell wide. Distance from vein cu-a to vein 1M 0.7 times length of cu-a. Hind wing 5.3 times as long as wide. **Legs:** Fore tibia with 7 thick spines at almost one row on inner side and with 7 spines on distal margin. Middle tibia with 2 spines on outer side and 5 spines on distal margin. Hind tarsus 0.9 times as long as hind tibia. Second tarsal segment 0.4 times as long as 1st segment, 1.5 times as long as 5th segment (without pretarsus). Hind basitarsus with lower keel. **Metasoma:** Length of 1st tergite nearly equal to its apical width; apical width twice its basal width. Length of 2nd tergite 0.5 times its basal width, equal to length of 3rd tergite. Second suture very fine. Ovipositor sheath 1.45 times as long as metasoma, 0.7 times as long as body, 0.85 times as long as fore wing. **Sculpture and setosity:** Head and mesosoma smooth. Promesosoma smooth. Metapleura smooth, punctulate-rugulose in posterior fifth. Propodeum smooth at large basolateral areas, remaining part

reticulate-rugulose. Legs smooth. First metasomal tergite entirely and 2nd in basomedian half striate; remaining part of metasoma smooth. Legs with large long, semi-erect and rather dense setae, length of setae on dorsal side of hind tibia 0.7–0.9 times as long as maximum width of hind tibia. **Colour:** Head black. Mesosoma light reddish brown. Metasoma dark reddish brown, 1st tergite (except medioposterior spot) and sides of 2nd tergite whitish yellow. Antennae reddish brown, 2 basal segments lighter. Palpi yellow. Tegulae light brown. Fore and middle legs light brown, hind leg light reddish brown, yellowish distally. Wings faintly infusate. Pterostigma brown.

Male. Similar to female. Body length 8.7 mm; fore wing length 6.7 mm. Antennae 50-segmented. Penultimate segment 3.7 times as long as wide, 0.8 times as long as apical segment. Mesosoma slender and longer, its length 2.5 times height. Pterostigma 5 times as long as wide. Basoventral tooth of hind coxa indistinct. Metasoma long and narrow. First tergite 1.6 times as long as apical width. Second tergite without lateral furrows, its length approximately equal to basal width, 1.2 times length of 3rd tergite. Second suture rather distinct. Second tergite entirely striate; 3rd tergite striate, basally and apically smooth; 4th and 5th tergites almost entirely finely granulose-striate. Length of setae on dorsal side of hind tibia 1.0–1.2 times as long as maximum width of hind tibia. Genitalia Fig. 73.

Etymology.—From Latin '*nigrum*' for 'black' and '*caput*' for 'head' because the new species has a black head.

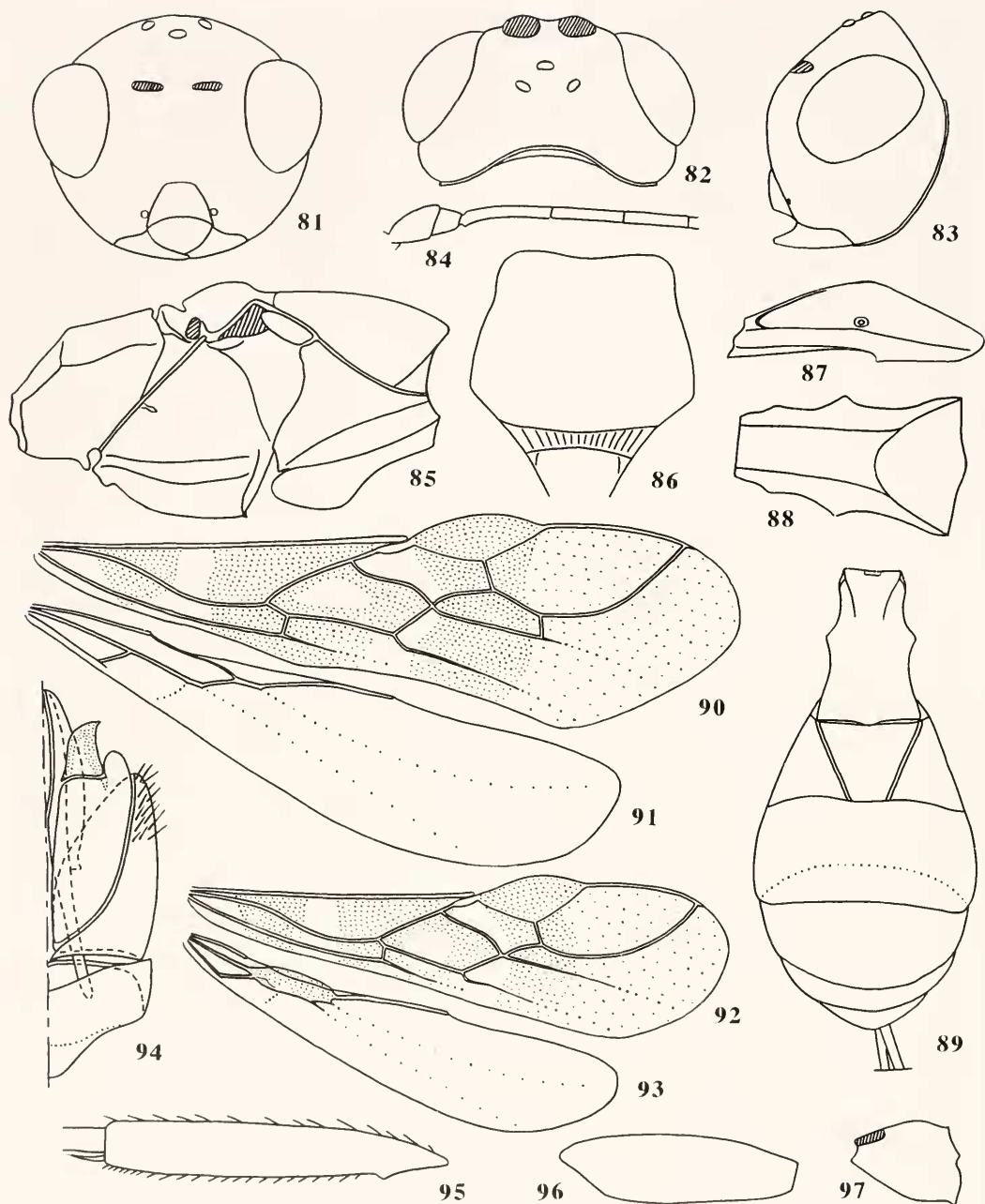
Afrospathius gen. nov.

Diagnosis.—This is the first genus from the subtribe Psenobolina (Spathiini) from Old World. *Afrospathius* gen.n. differs from other psenoboline genera in the absence of notauli, rather short marginal cell, absence of the 2nd radiomedial vein in the male, the male hind wing with stigma-like

enlargement, the 2nd metasomal tergite with a V-shaped figure, and the hind coxa with a basoventral tooth. The occurrence of both a hind wing parastigma in males, and of a basiventral tooth on the hind coxa, in many non-psenoboline doryctines suggests that these are symplesiomorphies and that the new genus is not simply a derived species within that group.

Description.—**Head:** transverse (Fig. 82), nearly 2.0 times wider than long medially. Scapus (Fig. 84) wide and short, without apical lobe; almost 1.5 times longer than maximum width. First flagellar segment simple, slightly curved, 1.1–1.3 times as long as 2nd segment. Palpi rather long; maxillary palpi 6-segmented, labial palpi 4-segmented; 3rd segment of labial palp slightly shortened. Hypoclypeal depression small and round. Clypeus high. Clypeal suture distinct. Malar suture absent (Fig. 81). Face without submedian depressions above clypeal suture. Eyes glabrous. Frons not concave and without median keel. Ocelli in triangle with base 1.3–1.4 times its sides. Vertex distinctly and sharply convex medially. Occipital carina present, absent ventrally and not fused with hypostomal carina. Postgenal bridge very narrow. **Mesosoma:** Neck of promesosoma very short, simple dorsally. Pronotal keel indistinct. Propleural lobe short and narrow. Mesonotum strongly and almost perpendicularly raised above promesosoma, its upper one or two thirds overhanging over promesosoma (Fig. 85); anterior upper border of mesoscutum sharp. Notauli absent or at most very shallow on anterior third. Prescutellar depression rather long and crenulate. Scuto-scutellar suture distinct. Scutellum weakly convex, without lateral carinae, its length almost equal to maximum width. Postscutellum with small median tooth. Subalar depression rather shallow and wide. Mesopleural pit distinct. Sternauli shallow, long, straight, and crenulate. Prepectal carina distinct and complete. Metapleural flange short, narrow and round

apically. Propodeum without marginate areas; lateral tubercles weak; propodeal bridge absent. Propodeal spiracles small and round. *Fore wing:* Pterostigma (Figs. 90, 92) wide; vein r arising from or slightly before middle of pterostigma. Marginal cell distinctly shortened; vein R1 nearly as long as pterostigma. Veins 2RS and r-m present in female (Fig. 90); in male vein r-m absent (Fig. 92). Vein m-cu interstitial or slightly antefurcal. Vein m-cu postfurcal. Discoidal cell petiolate. Vein 2CUb slightly curved basally. First subdiscal cell open apically. Vein M + CU sigmoid. Hind wing (Figs. 91, 93) with 3 hamuli on vein R1. Vein cu-a present. Subbasal cell medium size. Vein M + CU 1.1–1.4 times length of 1M. Vein m-cu present, curved towards base of wing, unsclerotized. Basal cell narrow, 0.3 times as long as hind wing. Vein RS arising from vein R1. Marginal cell weakly roundly narrowed toward apex, without additional transverse vein. Vein C + SC + R 1.2–1.5 times length of SC + R. Hind wing of male with stigma-like enlargement (Fig. 93). *Legs:* All tibiae distinctly thickened. Fore and middle tibiae with sparse small spines in single longitudinal rows. Hind tibia (Fig. 95) without spines on outer side of apex and with area on dense white setae on inner distal edge. Hind coxa small, with basoventral tooth (Fig. 97). Femora with small anterodorsal protuberances. Hind femur 3.6–3.8 times as long as wide (Fig. 96). Hind tibial spurs rather short and slender, sparsely setose, inner spur almost 0.3 times as long as hind basitarsus. Hind basitarsus 0.6–0.7 times as long as 2nd–5th segments combined. **Metasoma:** First tergite petiolate, but rather wide (Figs. 87, 89). Acrosternite 0.6 times as long as 1st tergite, its apical margin distinctly posterior to spiracles (Fig. 88). Dorsople of 1st tergite very fine; small round basolateral lobes present. Spiracular tubercles distinct and placed in basal third of 1st tergite; dorsal carinae present in basal third only. Second suture distinct, weakly curved lat-



Figs. 81-97. *Afrospathius dispar* gen. & sp. nov. 81—head, frontal view; 82—head, dorsal view; 83—head, lateral view; 84—basal segments of antenna; 85—mesosoma; 86—mesoscutum; 87—First metasomal tergite, lateral view; 88—First metasomal tergite, ventral view; 89—metasoma; 90—fore wing of female; 91—hind wing of female; 92—fore wing of male; 93—hind wing of male; 94—male genitalia; 95—hind tibia; 96—hind femur; 97—hind coxa.

erally. Second tergite with V-like figure (Fig. 89). Second to 6th tergites with separate laterotergites. Hypopygium small, with median pointed process medioposteriorly. Ovipositor longer than metasoma; apex of dorsal valve with 2 very small nodes and apex of ventral valves serrate. Male genitalia (Fig. 94) without volsellar apodema, dorsal bridge and basal lobe of basal ring present.

Distribution.—Africa (Senegal, Cameroon, South Africa).

Etymology.—from 'afro' for Africa, and the doryctine genus *Spathius*, because this genus is related to *Spathius*. Gender masculine.

Type species.—*Afrospathius dispar* sp. nov.

Afrospathius dispar sp. nov.
(Figs. 81–97)

Material examined.—Female HOLOTYPE with the following data: 'Senegal, Bambey, 1944, J. Risbec' (BMNH). Paratypes: 5 females, 11 males, 'Senegal, Bambey, 1944, J. Risbec' (BMNH, ZIP); 2 males, 'Senegal, Bambey, 623, J. Risbec', '13.V.31' (BMNH); 1 female (without fore wings), 'S. Africa, R.E. Turner, Brit. Mus. 1921–476', 'Mossel Bay, Cape Province, 1–14.XI.1921' (BMNH).

Description.—Female. **Body length**: 3.0–4.3 mm; fore wing length 2.2–3.0 mm. **Head**: Antennae 23–24-segmented. First flagellar segment 6.0–6.5 times as long as its apical width. Penultimate segment 4.0–4.5 times as long as wide, 0.5 times as long as 1st segment, nearly as long as apical segment. Apical segment not acuminate. Width of hypoclypeal depression 0.5–0.7 times distance from depression to eye. Clypeus with flange along lower margin. Tentorial pits very small. Cheek height 0.4–0.6 times height of eye, approximately equal to basal width of mandible. Face width 0.9–1.0 times eye height and equal to height of face and clypeus combined. Eye 1.3 times as high as broad. Temple behind eyes weakly roundly narrowed,

transverse diameter of eye 2.5–2.8 times as long as temple (dorsal view). POL 1.5–1.8 times Od, 0.5–0.6 times OOL; Od almost 0.3 times OOL. Head strongly and roundly narrowed below eyes. **Mesosoma**: Length 1.7–1.8 times its height. Mesoscutum weakly and shortly concave medially on anterior sharp margin. Subalar depression widely crenulate, with granulation between crenulae. Propodeum slightly and almost linearly narrowed toward apex, with small discontinuity near middle. **Wings**: Length of fore wing 3.3–3.5 times its maximum width. Pterostigma 2.5–2.8 times as long as wide. Vein 3RSa 1.5–2.0 times vein r, 0.3–0.4 times vein 3RSb, 0.9–1.0 times vein 2RS. Vein 3RSb roundly curved. Second submarginal narrow and rather short, its length 3.3–4.0 times its width, almost equal to length of 1st subdiscal cell. Distance from vein cu-a to vein 1M 0.7–1.0 times length of cu-a. First subdiscal cell rather narrow. Hind wing 4.0–4.7 times as long as wide. **Legs**: Fore tibia with 5–6 spines at one longitudinal row on inner side. Hind tarsus 1.1 times as long as hind tibia. Second tarsal segment 0.5–0.6 times as long as 1st segment, 1.4–1.5 times as long as 5th segment (without pretarsus). **Metasoma**: Length of 1st tergite 1.5–1.7 times its apical width; apical width 1.6–1.8 times its basal width. Length of 2nd tergite 0.7–0.8 times its basal width, 0.7–0.8 times length of 3rd tergite. Ovipositor sheath 1.1–1.4 times as long as metasoma, 0.6–0.7 times as long as body, 0.9–1 times as long as fore wing. **Sculpture and setosity**: Vertex densely striate; frons, face and cheek densely granulate, with sparse rugae; temple striate, with fine granulation. Mesoscutum densely and irregularly reticulate, only granulate in narrow lateral elongate areas. Scutellum granulose-reticulate. Mesopleura coriaceous in lower half, longitudinally striate in upper half. Propleura striate in upper two thirds, granulate in lower third. Metapleura and propodeum rugulose-reticulate. Legs densely and finely granu-

late. First metasomal tergite reticulate, with striations. Second and 3rd tergites striate with fine transverse rugulae between striae. Posterior third of 3rd tergite and 4th–5th tergites entirely very densely granulate. Legs with very short, semi-erect, pale, and sparse setae, length of setae on dorsal side of hind tibia almost 0.3 times as long as maximum width of hind tibia. **Colour:** Mesosoma and metasoma black or dark reddish brown. Head and mesosoma dorsally reddish brown. Palpi dark reddish brown. Antennae light reddish brown, slightly darkened toward apex. Tegulae dark reddish brown. Legs reddish brown, yellowish distally. Ovipositor sheath black, reddish brown basally. Wings hyaline, with several wide dark transverse bands and spots. Pterostigma dark brown. Parastigma and short distal part of vein SC + R pale yellow.

Male: Body length 2.3–4.3 mm; fore wing length 1.7–2.9 mm. Antennae 19–24-segmented. Vein 3RSa regularly roundly curved. Second radiomedial vein absent. Stigma-like enlargement of hind wing narrow, its length nearly equal to or slightly shorter than distance from enlargement to base of wing. Vein SC + R absent. Mesoscutum variable, smooth or sometimes coarsely or finely reticulate. Genitalia Fig. 94. Otherwise similar to female.

Remarks.—We have also examined one male from Cameroun ('Cameroun, Nkoemvon, 23.IX-25.X.1980, D. Jackson'), which represents a second species of this new genus. This specimen differs from *A. dispar* sp. nov. by its more elongate body, its 1st flagellar segment being as long as the 2nd, the first metasomal tergite being narrower and longer, the stigma-like enlargement of the hindwing being smaller, and the sculpture of mesoscutum being finer. We are not describing this species here because we only have a single male specimen.

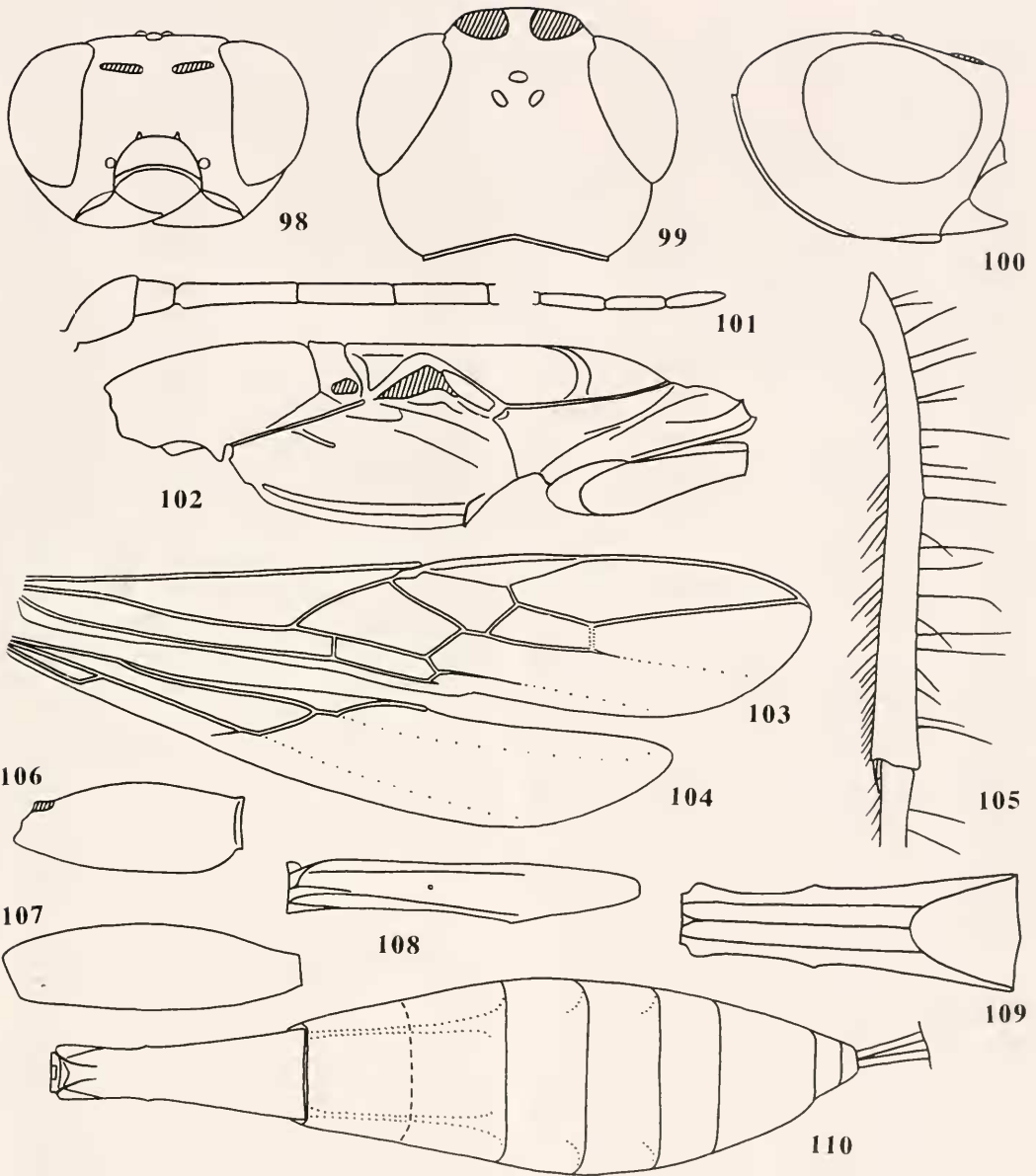
Etymology.—From Latin '*dispar*' meaning 'different' because males and females

are distinctly different in several morphological characters.

Hemispathius gen. nov.

Diagnosis.—This new genus is related to *Spathiomorpha* Tobias and differs by having the hind coxa without basoventral tooth, body strongly depressed, 2nd and 3rd tergites with two lateral parallel shallow furrows, propodeum without marginated areas, and mesoscutum granulate. *Hemispathius* gen. nov. differs from *Notiospathius* Matthew & Marsh by having the 1st subdiscal cell of fore wing closed, body strongly depressed, 2nd and 3rd tergites with two lateral parallel shallow furrows, propodeum without marginated areas.

Description.—**Head:** subcubical (Fig. 99), 1.3 times wider than long medially. Scapus (Fig. 101) wide and rather short, without any lobes; 1.6 times longer than maximum width. First flagellar segment longer than 2nd segment. Palpi rather long; maxillary palpi 6-segmented, labial palp 4-segmented; 3rd segment of labial palpi more or less long. Hypoclypeal depression rather great and oval (Fig. 98). Clypeal suture complete. Malar suture absent. Face with 2 small submedian depressions above clypeal suture. Eyes glabrous. Frons not concave and without median keel. Ocelli in equilateral triangle. Occipital carina present, lower lost and not fused with hypostomal one. Postgenal bridge narrow. **Mesosoma:** Body depressed. Neck of promesosoma long, with distinct convex dorsal lobe. Pronotal keel high, on anterior third of pronotum. Propleural lobe distinct and narrow. Mesonotum very weakly and roundly raised above promesosoma (Fig. 102). Median lobe of mesoscutum without anterolateral angulations (corners). Notauli crenulate, deep in anterior half, absent in posterior half. Prescutellar depression rather short and sculptured. Scuto-scutellar suture distinct. Scutellum flat, without lateral carinae, its maximum width 1.3 times length. Postscutellum with median carina. Subalar depression shall-



Figs. 98–110. *Hemispathius polystenoides* gen. et sp. nov. 98—head, frontal view; 99—head, dorsal view; 100—head, lateral view; 101—basal and apical segments of antenna; 102—mesosoma; 103—fore wing; 104—hind wing; 105—hind tibia; 106—hind coxa; 107—hind femur; 108—First metasomal tergite, lateral view; 109—First metasomal tergite, ventral view; 110—metasoma.

low and rather narrow. Mesopleural pit shallow and long. Sternauli rather deep, long, straight and smooth. Prepectal carina distinct and complete. Metapleural flange rather long, narrow and rounded apically. Propodeum without marginate

areas; lateral tubercles and propodeal bridge absent. Propodeal spiracles small and round. *Fore wing*: Pterostigma (Fig. 103) rather narrow; Vein r arising almost from middle of pterostigma. Marginal cell not shortened. Veins 2RS and r-m present.

Vein m-cu strongly antefurcal. Vein m-cu postfurcal. Discoidal cell petiolate. Vein 2CU_b arising from middle of apical side of 1st subdiscal cell. First subdiscal cell closed. Vein M + CU not curved to vein 1A. Hind wing (Fig. 104) with 3 hamuli on vein R1. Vein cu-a present. Subbasal cell short. Vein M + CU 0.6 times length of 1M. Vein m-cu present, curved toward base of wing. Basal cell wide, nearly 0.5 times as long as hind wing. Vein RS arising from vein R1. Marginal cell almost parallel-sided, weakly narrowed near apex, without additional transverse vein. Vein C + SC + R 0.6 times length of SC + R. *Legs*: All tibiae slender. Fore tibia with sparse large spines almost a single row. Hind tibia without spines on outer apical side and with area of dense white setae on inner distal edge. Hind coxa long, without basoventral tooth (Fig. 106). All femora without anterodorsal protuberances. Hind femur 3.2 times as long as wide (Fig. 107). Hind tibial spurs rather short and slender, glabrous or sparsely setose, inner spur almost 0.2 times as long as hind basitarsus. Hind basitarsus 0.8 times as long as 2nd–5th segments combined. *Mesosoma*: First tergite petiolate, narrow (Figs. 108–110). Acrosternite 0.6 times as long as 1st tergite, its apical margin placed posterior to spiracles. Dorsople of 1st tergite small; small round basolateral lobes present. Spiracular tubercles placed in basal third of 1st tergite; dorsal carinae present basally only. Second suture fine and almost straight. Second and 3rd tergites with lateral, shallow, parallel furrows (Fig. 110). Second to 6th metasomal tergites with separate laterotergites. Ovipositor shorter than metasoma; apex of dorsal valve with 2 small nodes and apex of ventral valves serrate.

Distribution.—Africa (Uganda).

Etymology.—From Greek 'hemi' for 'half' and the doryctine genus name *Spathius*, because this genus has a separate position in the *Spathius*-group. Gender: masculine.

Type species.—*Hemispathius polystenoides* sp. nov.

Hemispathius polystenoides sp. nov.
(Figs. 98–110)

Material examined.—Female HOLOTYPE with the following data: 'Uganda, Kitabwa, 2.12.63, Scolytid, K.W.Brown, B2475' (BMNH).

Description.—Female. **Body length**: 5.4 mm; fore wing length 3.8 mm. **Head**: Antennae slender, weakly setiform, 42-segmented. First flagellar segment 5 times as long as its apical width, 1.3 times as long as 2nd segment. Penultimate segment 5 times as long as wide, 0.5 times as long as 1st segment, as long as apical segment, not acuminate. Width of hypoclypeal depression 1.7 times distance from depression to eye. Clypeus with short flange along lower margin. Tentorial pits distinct. Cheek height 0.2 times height of eye, 0.35 times basal width of mandible. Face width 0.8 times eye height and 1.5 times height of face and clypeus combined. Eye 1.2 times as high as broad. Temple behind eyes roundly narrowed, transverse diameter of eye 1.7 times as long as temple (dorsal view). POL 0.9 times Od, 0.5 times OOL; Od 0.6 times OOL. Head roundly narrowed below eyes. **Mesosoma**: Length 3.4 times its height. Subalar depression entirely smooth. Sternauli deep medially. Propodeum almost linearly narrowed toward apex. *Wings*: Length of fore wing 4.8 times its maximum width. Pterostigma 5.5 times as long as wide, 0.8 times as long as vein R1. Vein 3RSa 4.2 times vein r, 0.35 times the straight vein 3RSb, 1.7 times vein 2RS. Second submarginal rather short, narrowed apically, its length 2.8 times its width, nearly equal to length of 1st subdiscal cell. First subdiscal cell rather narrow. Second abscissa of medial vein long, 0.6 times Vein m-cu. Distance from vein cu-a to vein 1M almost twice length of cu-a. Hind wing 5.8 times as long as wide. *Legs*: Fore tibia with 8 spines at one row on inner side and with 6 spines on lower

margin. Middle tibia with 3 spines on outer side and 4–5 spines on lower margin. Hind tarsus as long as hind tibia. Second tarsal segment 0.4 times as long as 1st segment, 1.4 times as long as 5th segment (without pretarsus). Hind basitarsus with lower keel. **Metasoma:** Length of 1st tergite 3 times its apical width; apical width nearly twice its basal width. Length of 2nd tergite almost equal to its basal width, equal to length of 3rd tergite. Ovipositor sheath 0.6 times as long as metasoma, 0.3 times as long as body, 0.5 times as long as fore wing. **Sculpture and setosity:** Head smooth, face striate. Mesoscutum finely granulate, rugose on greater medioposterior area. Scutellum very finely granulate. Mesopleura smooth. Lateral part of pronotum rugulose. Metapleura rugulose-striate. Propodeum densely punctulate-rugulose. Hind coxa and femur very finely granulate, hind tibia striate. First–3rd metasomal tergites densely rugulose; 4th–6th tergites finely rugulose-reticulate in basal halves; 7th tergite finely coriaceous. Body with long outstanding and rather sparse setae. Legs with long, erect and rather dense setae, length of setae on dorsal side of hind tibia 1.7–2.3 times as long as maximum width of hind tibia, significantly longer than length of setae on ventral side. **Colour:** Head light reddish brown. Mesosoma light reddish brown, dark dorsally. Metasoma dark reddish brown, with light areas laterally and posteriorly on 2nd–6th tergites. Antennae light brown, darkened toward apex. Palpi yellow. Legs yellowish brown; hind femur in subapical two fifths dark. Tegulae yellow. Wings faintly infusate. Pterostigma pale yellow, with brown large median spot.

Male unknown.

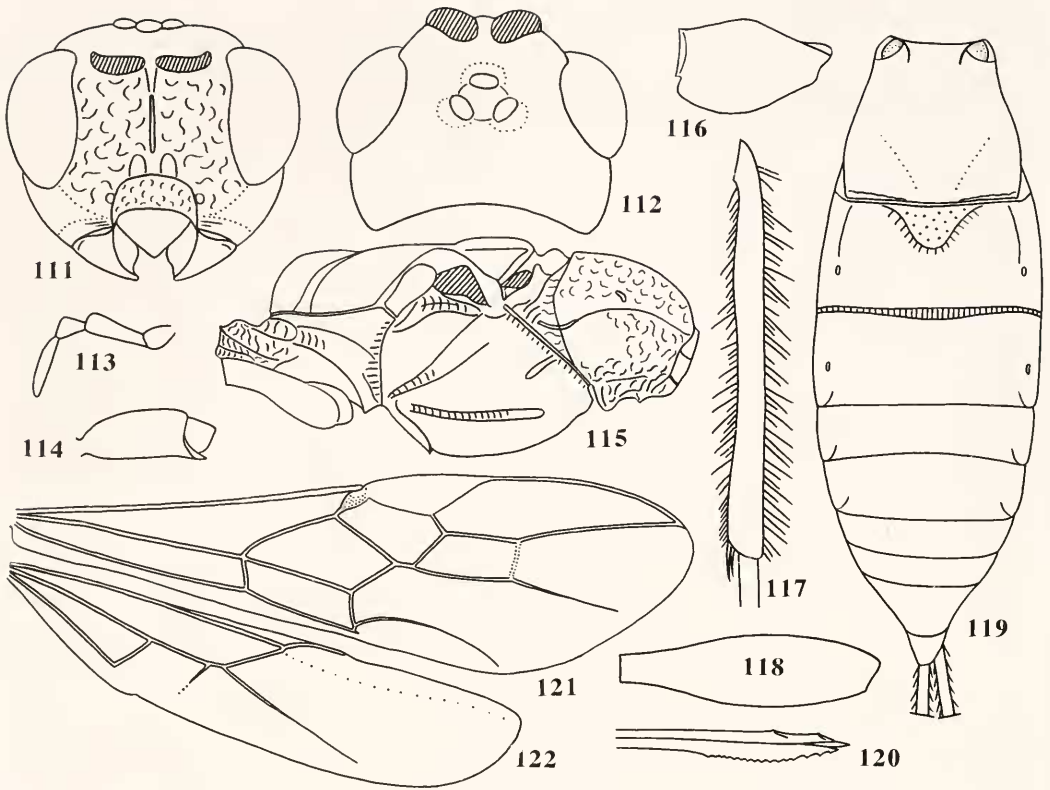
Etymology.—From the generic name *Polystenus* because the habitus is similar to that of *Polystenus* species.

Antidoryctes gen. nov.

Diagnosis.—This new genus belongs to the Binariini (sensu Belokobylskij, 1992)

being most closely related to the Neotropical genus *Liobracon* Szépligeti. The Binariini are defined by the following synapomorphies: occipital carina absent, neck of pronotum with one or two obtuse or pointed tubercles or spines, hind coxa without ventral tubercle, second metasomal tergite with furrows defining an area and usually with the third segment of the labial palp distinctly shortened. All of these are also displayed by the new genus. The new genus differs from *Liobracon* in the scapus not being depressed and lacking the dense apical row of setae, though the scapus does have a distinct apical lobe as in *Liobracon*. It also differs in that the marginal cell of the hind wing lacks an additional transverse vein, and in that the dorsal part of the pronotum is flat and has low lateral tubercles. The new genus also appears to be related to the Australian binariine genus *Acanthodoryctes* Turner from which it differs in having the third segment of labial palp short, frons rather flat, scapus with distinct apical lobe, marginal cell of fore wing not shortened, hind wing with vein m-cu, pronotum without a pair of spine-like protuberances, and 1st metasomal tergite without especially modified setosity (Quicke 1984; Quicke *et al.* 1992b; Austin *et al.* 1994).

Description.—**Head:** subcubical (Fig. 112), 1.3 times wider than medially long. Scapus with distinct semicircular apical lobe (Fig. 114), rather narrow and long, 2.5 times longer than maximum width. Palpi relatively long; maxillary palp 6-segmented, labial palp 4-segmented. Third segment of labial palp shortened, subtriangular, 0.55–0.6 times as long as 2nd and 4th segments separately. Hypoclypeal depression small and round (Fig. 111). Clypeal suture wide and complete. Subocular (malar) suture very shallow. Face with two distinct submedian, oval depressions above clypeal suture. Eyes glabrous. Frons not concave and without a midlongitudinal keel. Ocellar triangle with base 1.2 times longer than sides. Postgenal bridge



Figs. 111–122. *Antidoryctes pronotalis* gen. et sp. nov. 111—head, frontal view; 112—head, dorsal view; 113—labial palp; 114—scapus and pedicellus; 115—mesosoma, lateral view; 116—hind coxa; 117—hind tibia; 118—hind femur; 119—metasoma, dorsal view; 120—apex of ovipositor; 121—fore wing; 122—hind wing.

very narrow. **Mesosoma:** Neck of promesosoma rather long, more or less flat dorsally, with two distinct elongate, obtuse, wide lateral protuberances. Pronotal keel high, concave medially, situated near anterior margin of pronotum. Propleurae without protuberances. Propleural lower lobe distinct and wide. Mesonotum rather highly and roundly raised above promesosoma (Fig. 115). Medial lobe of mesonotum without antero-lateral angulations (corners). Notauli smooth, deep along anterior half, shallow or almost absent posteriorly. Prescutellar depression rather short and sculptured. Scuto-scutellar suture distinct. Scutellum weakly convex, without lateral carinae, 1.3 times longer than maximum width. Postscutellum (median area of metanotum) with short, flat medial tooth. Subalar depression deep,

narrow and placed rather low (Fig. 115). Mesopleural pit shallow. Sternauli deep, long, straight, and crenulate. Prepectal carina distinct and complete, not higher than sternauli. Prepectus with distinct and oblique lateral furrows. Metapleural flange rather long, wide and round apically. Metapleural suture present. Propodeum without areas; lateral, tubercles and propodeal bridge absent. Propodeal spiracles small. **Wings:** Pterostigma of fore wing (Fig. 121) wide; Vein *r* arising almost from middle of pterostigma. Marginal cell slightly shortened. Veins 2RS and *r-m* present. Vein *m-cu* antifurcal. Vein *m-cu* interstitial. Discoidal cell short, petiolate. Vein 2CUB arising from posterior fifth of apical side of 1st subdiscal cell. First subdiscal cell closed. Veins 1a and 2a absent. Hind wing (Fig. 122) with four hamuli on

vein R1. Vein cu-a present. Subbasal cell large. Vein M + CU nearly twice length of 1M. Vein m-cu present, antefurcal, almost perpendicular to medial vein. Basal cell wide, 0.55 times as long as hind wing. Vein RS arising from vein 1M near vein R1. Marginal cell weakly narrowed towards apex, without additional transverse vein. Vein C + SC + R 1.5 times length of SC + R. *Legs*: Fore and middle tibiae with one longitudinal row of widely-spaced, large spines. Hind tibia with two small spines apico-laterally, and with area of dense white setae near apex medially. Hind coxa small, without basoventral tooth (Fig. 116). Femora simple, without dorsal protuberances. Hind femur 3.5 times longer than wide (Fig. 118). Hind tibial spurs rather short, weakly thickened, sparsely setose, inner spur approximately 0.33 times as long as hind basitarsus (Fig. 117). Hind basitarsus 0.7 times length of segments 2–5 combined. **Metasoma**: First tergite not petiolate, wide (Fig. 119), with small round basolateral lobes. Dorsople large. Spiracular tubercles indistinct, spiracles located on basal third of tergite. Acrosternite approximately 0.25 times as long as 1st tergite, its apical margin distinctly before spiracles. Second tergite with small, semi-oval mediobasal area (Fig. 119). Second suture distinct, weakly curved laterally. Second and third tergites with separate laterotergites. Hypopygium small, with two pointed and separate processes medioposteriorly. Ovipositor longer than metasoma; apex of dorsal valve with 2 small nodes (Fig. 120).

Distribution.—Australia.

Type species.—*Antidoryctes pronotalis* sp. nov.

Etymology.—From Latin “anti” for “contrary” and the generic name *Doryctes*. Gender masculine.

***Antidoryctes pronotalis* sp. nov.**
(Figs. 111–122)

Material examined.—Female HOLOTYPE with the following data: “Millstream Falls,

near Ravenshoe, NQL, 5 Jan. 1967”, “M. V. Lamp, D. K. McAlpine & G. Holloway” (BMNH).

Description.—Female. **Body length**: 15 mm; fore wing length 10.8 mm. **Head**: strongly and roundly narrowed below eyes. Width of hypoclypeal depression 0.8 times distance from depression to eye. Clypeus without carina separating off hypoclypeus. Tentorial pits distinct. Cheek height 0.4 times height of eye, 0.8 times basal width of mandible. Width of face nearly equal to height of eye and equal to combined height of face and clypeus. Eye 1.2 times higher than broad. Temple behind eyes roundly narrowed, transverse diameter of eye 1.5 times length of temple (in dorsal view). POL 0.7 times Od, 0.5 times OOL; Od 0.7 times OOL. **Mesosoma**: 2.2 times longer than high. Subalar depression smooth, crenulate on anterior third. Propodeum convex and roundly narrowed towards apex. *Wing*: Length of fore wing 3.5 times its maximum width. Pterostigma 3.3 times as long as wide, 0.6 times length of vein R1. Parastigma thickened. Vein r arising from middle of pterostigma. Vein 3RSa 3.3 times vein r, 0.4 times the straight vein 3RSb, 1.4 times 2nd radiomedial vein. Second submarginal rather short, twice as long as wide, 0.8 times length of 1st subdiscal cell. First subdiscal cell wide. Vein 2M rather short, 0.3 times length of vein m-cu. Hind wing 4.5 times as long as wide. *Legs*: Fore tibia with longitudinal row of 5–6 spines and with 7 spines on distal margin. Middle tibia with two medial spines and with 6 spines on distal margin. Hind tarsus 0.7 times length of hind tibia. Hind basitarsus 2.0 times longer than 2nd segment. Second segment approximately as long as telotarsus (excluding pretarsus). Hind basitarsus without ventral keel. **Metasoma**: Length of 1st tergite 0.9 times its apical width. Second tergite 0.6 times as long as basally wide, 1.2 times length of 3rd tergite. Ovipositor sheath 1.2 times metasomal length, 0.6 times body length, 1.1 times fore wing

length. **Sculpture and setosity:** Head smooth; face coarsely and irregularly reticulate-rugose. Mesosoma largely smooth; propleura rugose on anterior third, metapleura reticulate rugose, almost smooth on upper, anterior third. Propodeum finely reticulate. Legs smooth. Metasoma smooth, furrow around basal area of 2nd tergite distinctly, sparsely crenulate. Metapleura and propodeum with sparse, long, pale setae. Legs with long, erect, pale, rather sparsely distributed setae; lengths of setae arising from dorsal surface of leg 1.1–1.3 times maximum width of hind tibia. **Colour:** Head yellowish white. Pro- and mesothorax (except posterior side of mesoscutum and scutellum) and 3rd–6th metasomal tergites black. Rest of mesosoma and posterior of metasoma light reddish brown. Metasomal tergites 1 and 2 yellow. Scapus dark reddish brown, pedicel light reddish brown. Palpi yellow. Legs light reddish brown. Fore coxae largely, mid and hind coxae entirely, mid and hind trochanters and hind femur dark reddish brown to black. Mid- and hind tarsi reddish. Tegulae reddish brown. Wings infusate with yellowish tint. Pterostigma and veins on basal quarter yellow, remaining venation dark but becoming paler again towards apex.

Male unknown.

Etymology.—Because the pronotum is likely to show species level differences as in other genera of Binariini.

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